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ABSTRACT

The volume consists of papers from the 1985 symposium "Identification of the Gifted" at the Sixth World Conference on Gifted and Talented Children in Hamburg (Federal Republic of Germany). Twelve chapters have the following titles and authors: (1) "Introduction" (J. F. Feldhusen and K. A. Heller); (2) "A Conception of Giftedness" (J. F. Feldhusen); (3) "The Identification of Gifted Children in Secondary Education and a Description of Their Situation in Holland" (F. J. Monks et al.); (4) Identification, Development and Analysis of Talented and Gifted Children in West Germany" (K. A. Heller and E. A. Hany); (5) "Identification of Highly Gifted Adolescents--Methods and Experiences" (G. Trost); (6) "Identification by Provision: Limited Field Test of a Radical Alternative for Identifying Gifted Students" (B. M. Shore and A. Tsiamis); (7) "The Identification and Labeling of Gifted Children. What Does Research Tell Us?" (A. Robinson); (8) "Taxonomical Approach to Qualitatively Differential Didactics for the Gifted in a Democracy" (H. G. Jellen and D. L. Gulley); (9) "Competition System for Gifted Children in Hungary" (A. Pek); (10) "Talent Education in the Hungarian School Environment" (Z. Bathory); (11) "The First Information and Counseling Center for the Gifted in West Germany" (B. Feger and T. Prado); (12) "Are Highly Gifted Children and Adolescents Especially Susceptible to Anorexia Nervosa" (M. Detzner and M. H. Schmidt). The Appendix includes a selected bibliography with emphasis on German literature. (JW)

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Kurt A. Heller and John F. Feldhusen
(Editors)

Identifying and Nurturing the Gifted
An International Perspective

The contributions to this volume stem from the symposium «Identification of the Gifted» held on August 9, 1985, at the 6th World Conference on Gifted and Talented Children in Hamburg (Federal Republic of Germany).

The Organizing Committee of the Conference has provided substantial support to the publication of this book.

Kurt A. Heller and John F. Feldhusen

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Identifying and Nurturing the Gifted

An International Perspective

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Preface

Wilhelm Wieczerkowski & Arthur J. Cropley

Gifted children have raised special problems for educational policy makers in recent years, not only in Europe but in other regions too. As GALLAGHER (1986a) pointed out, the fact that they differ from other children in their ability to absorb the contents of lessons suggests to some politicians and educators that special provision is not only completely unnecessary, but may even have socially undesirable consequences. The idea of broadening and deepening the lessons these children receive, and thus widening the differences in achievement between them and other students, is often seen in Northern and Western European nations as an expression of elitism or of ultraconservative ideology. One must, however, ask if fairness or equality of educational opportunity are really reduced by paying special attention to these children, or whether the identification and fostering of giftedness should not be regarded as a necessary part of such equality and fairness.

Despite political, economic and cultural differences between societies, programs of identification and fostering of giftedness have in recent years been developed and tested on a worldwide basis. One indicator of this is to be seen in the fact that nearly 500 papers by authors from 47 different nations were presented at the Sixth World Conference on Gifted and Talented Children in Hamburg in August 1985. The present book, 'Identifying and Nurturing The Gifted' summarizes the results of one of the major symposia held during this conference.

The Phenomenon of Giftedness

Few observers would deny that there are a small number of individuals in every class at all levels of every educational system who display special characteristics and properties such as *rapid grasp of ideas, high levels of concentration, unusually effective organization and storage of information,* and the like. Retrospective studies of outstanding individuals indicate that these characteristics are usually observable at an early age: Such people display, for instance, an early and insatiable thirst for knowledge, great persistence in the solving of difficult problems, a high level of flexibility in thinking, and many similar characteristics. Striking performance involving unusually high quality in thinking processes, exceptional mastery of verbal, numerical and figural symbols, extremely high scores on tests, or unusual success in school learning tasks, which are seen even at elementary school level, can be taken as indicating the existence of an exceptional intellectual potential. This procedure, concluding inductively on the basis of observed phenomena that a special potential is present and subsequently making predictions about future behaviour based on this inferred potential, is consistent with the traditional scientific method.

In its simplest form the model - observation of behavior, inference of potential, and prediction of future behavior - is only legitimate when 1) the potential which is later to manifest itself in the form of observable behavior is innate and 2) there are reasonable grounds for believing that the potential will realize itself regardless of external circumstances, even in the presence of an unfavorable environment. Classical European developmental psychology adopted this essentially endogenous model by accepting these assumptions; this approach played the dominant role in research on giftedness and its development until the 1960s. However, as will be seen in more detail shortly, more recent research indicates that a 'naive' endogenous approach cannot account for observable phenomena.

Giftedness as a Psychological Construct

TERMAN (1925/1959) was one of the first researchers to attempt to identify gifted children on the basis of IQ. His longitudinal study can be seen as an attempt to specify the nature of giftedness and developmental conditions leading to its realization - in other words, as an attempt to define the the psychological construct 'leading to' the observable phenomenon. He defined persons with an IQ of 140+ as gifted. Although other authors have set a lower cutoff point, the exact value of the critical IQ ist not the decisive issue here: Much more important in TERMAN's work was the idea that there is a normal distribution of ability, even if this is reduced simply to performance on an intelligence test, and the concretization of giftedness in terms of this model. This approach has only recently begun to be questioned.

KLEIN (1986) raised a number of objections to both the endogenous approach and its concretization in terms of IQ. These can be summarized as embracing four points:

(1) Giftedness is not identical with high intelligence, even though it is true that a high level of development of intellectual ability is a central aspect.
(2) Giftedness involves the entire personality of the individual, including interests, motives, persistence, diligence, and so on.
(3) Giftedness occurs in many areas of human activity - in science, technology, music, art, organizational ability, etc.
(4) Innate potentials are not automatically realized without regard to the circumstances of life. The realization of an innate potential consists in and is facilitated by its exercise in real life.

WEINERT & WALDMANN (1986) too cautioned against reduction of the construct of giftedness to a particular IQ score, pointing out that this can lead to neglect of essential cognitive processes such as the ability to think in complex systems, to recognize relationships and achieve insights which others possessing a similar amount of information do not achieve, extreme thoroughness and high levels of flexibility in thinking.

Disruptions of the Development of Giftedness

Emergence of giftedness has recently been shown to be a developmental process (e.g. URBAN & GEUSS, 1982, 1984; WIECZERKOWSKI & WAGNER, 1985; GALLAGHER, 1986b). Among the conclusions which have been reached by researchers in the area is that exceptional potential only realizes itself in the form of outstanding performance if a number of facilitating conditions such as motivation, concentration, and persistence come together in a *favourable constellation of facilitating factors.* The interactions among the elements of such a constellation are, it must be admitted, still largely undetermined; as a result predictions about individual people still contain a good deal of uncertainty.

Despite this, recent research findings yield a general picture of the situation. GALLAGHER (1986), for example, has tried to integrate the complex interplay of factors in the process of realization of creative potential in a *model of intellectual productivity.* He has identified six key factors on the basis of the relevant literature, and has assigned them theoretical weights in a quasi analysis of variance approach to development of talent (cf. table 1).

The *ability to master abstract systems of symbols* (verbal, mathematical, musical or artistic) constitutes the central factor in intellectual productivity. This ability makes the largest single contribution to the variance in the area.

Opportunities for talent development both in and out of school, for instance in the form of a permanent confrontation with new ideas which challenge the child's talents, also make an important contribution.

Parental encouragement of talent and relaxed acceptance of the child's abilities is an important precondition for their development. It is not impossible that the proportion of the variance accounted for by this variable has been underestimated in table 1 in the case of children from disadvantaged home backgrounds. Preliminary findings obtained in the Counselling Centre for the Gifted in Hamburg (see FEGER & PRADO, chapter 11 in this volume) indicate that parents of blue collar families have difficulty in helping a gifted child. These parents express, above all, two concerns: 1) that the child's talent will demand too much from them, and 2) that their friends and acquaintances will regard them as excessively ambitious. For this reason, they tend to try to make the child conform to 'normality'.

Table 1: A model of intellectual productivity (Gallagher, 1986)

Key factors		Estimated variance contribution
A:	Ability to master abstract systems of symbols	30-50%
B:	Opportunities for talent development	10-20%
C:	Parental encouragement of talent	10-20%
D:	Self-confidence	10-15%
E:	Subcultural approval of intellectual activities	5-10%
F:	Peer influences	5-10%
AxB, BxC ...	Interactions	15-25%

Intellectual Productivity = f (A, B, C, D, E, F, AB, ..., ABC ...)

Self-confidence in one's own ability to cope with the challenges of the environment is also of importance for the development of talent. This confidence in oneself can, unfortunately, be interpreted by other people as arrogance, and can lead to rejection. Children whose self-confidence is repeatedly shaken by criticism of this kind can easily begin to doubt themselves and accept the negative stereotype held by those around them.

Subcultural approval (or disapproval) of intellectual activities probably also play a role which is underestimated in the case of children from disadvantaged backgrounds. These youngsters probably suffer a substantial disadvantage in comparison with children whose families stress traditional cultural values. The likelihood that they will be widely read or able to play a musical instrument, or even be in a position to anticipate that their ideas will receive an interested reception, is low.

The influence of peers on willingness to develop intense interest and engage in intensive activity in a particular area constitutes the final key factor. It is hardly necessary to discuss in detail the well known phenomenon of group sanctions against deviation from its norms. Elementary school children who seek to enter into detailed discussions of their special interests with peers normally not only encounter lack of interest, but may also quickly become isolated from the group. Many gifted younger children often respond by seeking contact with older children, or even adults. Two-way and higher order interactions round out the complex picture. It is, however, not possible to specify their significance in detail.

Naturally, the point of an analysis such as the present one is not to provide the interested reader with a definitive statement about the contribution of certain variables to the development of giftedness. The analysis suffices merely to indicate the complexity of the processes which shape the human being-environment interaction which leads to the development of exceptional abilities. Because of the complexity of this interaction, there is considerable danger that potentials will not be realized.

Understimulation continuing over a number of years, especially at the elementary school level, can lead to substantial disruptions of the developmental process, especially when access to compensatory activities both in and out of school is limited. The consequences which frequently appear are lack of interest in school, loss of motivation, unwillingness to make the necessary effort, behavioural disturbances or failure.

Although these consequences can easily occur, they are not unavoidable. Nonetheless, from the point of view of a counseling centre for gifted children which is particularly called upon for help by parents who are uncertain what they are to do, concern that disturbances centering on the school will occur among the gifted is by no means an over hasty generalization, but constitutes a *fact* of day to day experience, one which requires theoretical analysis. Naturally, not all gifted children and young people experience such difficulties - a substantial number of them adjust to the lack of stimulation they find in the school by seeking the necessary experiences outside the school, or by extreme conforming behaviour.

Little is known about the distribution of potentially gifted children over the various possible forms of reaction to understimulation in the school, and no indicators are at present available which permit clear cut predictions about which form of reaction a particular child will display. Those who conform to the norms of the school and more or less master the requirements of the conventional classroom are frequently identified by their teachers as gifted (cf. Busse, Dahme, Wagner & Wieczerkowski, 1986), but those children who refuse to go to school, display behavioural disturbances or fail are often described merely as 'exceptional' - they are rarely identified as 'gifted'. The reason seems to be obvious: Exceptionality is generally defined in terms of learning difficulties, and not of unrealized potential for giftedness.

Identification and Provision of Gifted Education

Identification without subsequent provision of special educational procedures is a mere empty promise, and is to be rejected on a number of grounds: (1) Giftedness is not a mere label which constitutes an end in itself; it involves an obligation on the part of both individual and society to develop talent to the benefit of all. (2) 'Gifted' should not be seen as constituting the opposite pole to 'ungifted', but rather as implying differently gifted. Explaining this to parents, children and teachers seems to be essential for a realistic understanding of the phenomenon, and for the development of realistic expectations of the gifted. (3) Giftedness needs to be understood as not simply a cognitive phenomenon, but also as a complex of motivational, emotional and volitional factors - understanding of this point is essential if gifted children and their parents are to be offered the help they need.

Strategies for the identification of gifted children can be divided into two broad categories: *1) Goal oriented talent searches* and *2) identification as a response to a felt need*, for example difficulties in school. Both strategies have in common the wish to make the fewest possible Type I and II errors. Apart from this, however, the two strategies have markedly different goals. The talent search approach seeks, above all, to identify gifted children for special programs. Since the number of available places in such programs is usually limited, the main goal is to keep the number of Type I errors as low as possible. Since it is politically and educationally unacceptable to achieve a rigorous reduction in the number of Type II errors, the strategy comprising Select-Pretest-Foster-Posttest is particularly appropriate (cf. figure 1).

SELECTION		FOSTERING STRATEGY	
Nomination by Teacher Parent Peer Self	'TEST'	Observation of Behaviour Level of Participation Estimate of Degree of Success	'TEST'

Figure 1: Multiple Strategy Select-Pretest-Foster-Posttest

A talent search is basically simple: (1) The program is oriented towards a particular group such as twelve year olds with particular mathematical talent who obtain scores in mathematics tests characteristic of children four years older (or whose score in a standardized test reaches the level of at least an average 16 year old). (2) In a preselection phase interested students are informed about the program and invited to take part. Nominations may also be accepted from teachers, parents or peers, as well as from students themselves. (3) Potential participants receive further information after nomination, so that they can decide whether they wish to participate in the talent search or not. (4) The students are tested in order to select those who are to be accepted for the special program. (5) During the course of the program the reliability of the talent search procedure (i.e. the degree to which Type II errors have successfully been avoided) is determined by observing the behaviour of participants, noting the level of attendance, and measuring performance. (6) It is also possible if desired to assess the degree of development of prerequisites for participation in further programs (cf. WIECZERKOWSKI & WAGNER, 1985; WAGNER, ZIMMERMANN, & STÜVEN, 1986).

Manifestations of Disturbances in a Counseling Setting

The disadvantage of the talent search strategy lies in the fact that the nominated participants are generelly self-confident, goal oriented children who welcome the challenge, usually because they have already had considerable success in mathematics. Those who are identified by virtue of the fact that they seek help from the counseling centre, on the other hand, are mostly quite different - children and young people who are experiencing personal and educational problems. Only a very small proportion come on their own initiative. The people making contact with the centre are usually the parents, who are concerned about the child or its future. The problems reported are usually specific.

In the case of *preschool children* the parents usually have no idea how to respond to the thirst for knowledge and desire to learn shown by their children. They are uncertain whether it is better to encourage the child or to hold it back. In particular, they are uncertain about whether they should or should not discourage development of school related skills such as reading, counting and writing. In the case of *elementary school children*, school is often a source of disappointment to the youngsters, because they are obliged there to operate at a level well below their potential. Their thirst for knowledge is both passively and actively discouraged, and they are expected to concentrate on elementary skills which they have already mastered. Such children can quickly become involved in a *spiral of disappointment*, to which they react with withdrawal, aggression and inattention. At the time of *puberty* a number of children display a fall off in achievement, accompanied by inability to engage in concentrated, goal oriented study. At the same time, many of them display a *distrust of authority* which is not easy to eliminate, even in a psychological counseling session.

A major problem is that disturbances of the developmental process also depress test scores. Consequently, it is important to take careful account of such disturbances in the identification process. This is particularly true in the case of children from a blue collar background; they are the very group which needs identification procedures attuned to their special situation (cf. FEGER, WIECZERKOWSKI, & PRADO, 1986).

Identification and special provision cannot be separated from each other. The fact that the present book on identifying and nurturing giftedness concentrates on identification and related issues should be seen as an indication of just how much still needs to be done in the area. The book cannot and should not seek to offer the final answer. If, however, it succeeds in awakening the reader's interest in a complex area, then it has achieved its primary goal. We believe that it will do this in an interesting and effective way, and congratulate the editors and individual authors on their contributions.

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CHAPTER I

Introduction

John F. Feldhusen & Kurt A. Heller

Research on the highly gifted presents a number of serious problems. The definition itself causes serious problems. Is high giftedness the same thing as very high intelligence and/or creativity? Is it above-average achievement orientation or unusual accomplishments in qualitatively challenging tasks? Is it strong interests or task commitment for one or more (not too narrowly defined) achievement area(s)? Such questions must be scientifically clarified before the conceptual problems of identification, counseling/guidance and fostering of highly gifted children and youth are dealt with. Only on the basis of documented results concerning the behavior of the highly gifted as well as their psychological development and the socialization factors which promote or detract from it, can practical work on gifted education be fully successful. The efficiency of programs and counseling measures are not independent from the quality of the identification process, i.e. dependent on reliable and valid assessment of high giftedness (cf. FELDHUSEN, 1985).

The following contributions stem from the symposium 'Identification of the Gifted' held on August 9, 1985 at the 6th World Conference on Gifted and Talented Children in Hamburg (Federal Republic of Germany). The very active participation of many Congress members, as well as numerous questions caused the editors to publish the individual presentations in revised and to some degree extended form.[1]

After the overview of newer concepts and models of giftedness in Chapter II, there follow longer presentations of three longitudinal studies (Chapters III, IV and V), a critical discussion with current identification measures, and an alternative approach (Chapter VI). The literature search on the topic of 'Identification and Labeling of Gifted' in Chapter VII is followed by three contributions dealing with didactic, psychopedagogic, and educational policy questions in fostering giftedness (Chapters VIII, IX and X). The first psychological counseling and guidance center for the gifted in the Federal Republic of Germany is described in Chapter XI and an empirical study on the relationship of giftedness to anorexia nervosa in Chapter XII. Finally, on Appendix by B. FEGER contains a selective bibliography on Identification of the Intellectually Gifted (cf. also BARTENWERFER, 1985).

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A brief commentary by the editors should make it easier to approach this book.

1. Theoretical and Methodological Problems of the Identification of Giftedness

A commonly accepted definition of giftedness has not yet been found, but rather a broad spectrum of definitions and concepts related to giftedness characterize this field. Researchers and practitioners may hold widely differing conceptions of giftedness. Giftedness is also not objectively observable but rather a socialcultural phenomenon. Sometimes giftedness is seen as a set of attributes (e.g. intelligence, creativity, memory) each of which themselves are hypothetical constructs. They are joined together in the term ‘giftedness’ (FREEMAN & URBAN, 1983). It is assumed here that giftedness exists as a set of characteristics which can be isolated. Various definitions of giftedness are presented and discussed in Chapter II.

FELDHUSEN et al. (1985) have discussed a variety of problems which confront us in our efforts to identify giftedness and talent. They noted, first of all, that the identification process must be linked to the type of program services to be offered. Unfortunately gifted programs often identify youth with one type of giftedness and provide services for another type of giftedness. They also noted the problem that the identification process may be used to select youth who are ‘all purpose’ or generally gifted but fail to specify the specific talents or strengths of the students identified.

For a long time giftedness, especially extreme giftedness, was viewed one-dimensionally. Correspondingly, (linear) measurements were carried out – and to a great extent still are – in the so-called cut-off method. Here, a certain IQ value, for example, IQ = 130+, is used to identify a certain percentage of the highly gifted (in this example the top 2.5% of an age group). This procedure of selecting the highly gifted is questionable and methodologically problematic for several reasons.

On the one hand, this approach is based on the (implicit) assumption that there is one – and only one – form of giftedness. Even in our daily lives we are often confronted with this idea, when it is said that Jim is ‘very gifted’ and Bob is not. Thus, one is either ‘gifted” or not, which overlooks the fact that many people are talented in different ways for single task areas. This observation is better represented by differential giftedness theories.

On the other hand, the problem of overlapping test values from various groups, for example the highly gifted and the moderately gifted, demonstrate that every cut-off score is somewhat random. The cut-off score is commonly set using the convention of a nicely rounded number – both in research and in the practice of identification of the gifted – (for example, a sigma score of +2 or +3 on the Wechsler-IQ scale) as opposed to some validated criterion. This problem also holds when one uses achievement test scores with cut-off levels in the identification process. One appropriate strategy to use with differential constructs of giftedness is the classification approach as employed by Heller (1970) for the diagnostic separation of different groups of gifted youth in educational guidance and counseling, as well as for the identification of so-called talent reserves. This approach has been implemented in various psychopedagogic applications and elaborated according to cluster analysis (Allinger & Heller, 1975; Rosemann, 1978; Rosemann & Allhoff, 1982); for methodology in general cf. Cooley & Lohnes (1971), Anderberg (1973), Bock (1974) among others.

Finally, the cut-off score method has also proven to be unsuitable for the diagnosis of giftedness in individual counseling. In so far as giftedness represents, directly or indirectly, the cause of behavior or school difficulties, social conflicts or developmental problems, intervention oriented diagnosis strategies are indicated. Although for *diagnosis*, the individual case is in the foreground of the psychological analysis, in the *talent search* an effort is made to locate groups of especially gifted or talented youth and to foster their talent (Wieczerkowski & Wagner, 1985). Group tests are characteristic of this approach and a successive decision strategy is usually followed. An example of this is the sample model of the Munich longitudinal study 'Forms of Giftedness in Children and Adolescents: Development and Achievement Analysis', Chapter IV of this book. In the talent search, then, the nurturing aspects and/or scientific interests are foremost.

Despite varying emphases in the procedures, one should view diagnosis and talent search less as opposites than as complementary approaches to the identification of gifted children and adolescents. In both cases, two types of errors are to be noted: 1) type alpha errors and 2) errors of type beta. The *alpha error* occurs when a person is identified as being highly gifted who actually is not highly gifted. The *beta error* is failure to identify a student as moderately gifted who is in actuality highly gifted. Unfortunately it is not possible to reduce both types of errors simultaneously. Depending on the goal and intent of the identification process, one either raises the cut-off score thereby reducing the first type of error (and increasing the rate of the other type of error) or one lowers the cut-off score in an attempt to reduce the second type of error (but causing an increased alpha error). Whereas, institutions generally attempt to reduce the first type of error, it is recommended that for *individual* decisions, the second type of error be kept to a minimum (cf. Cronbach & Gleser, 1965). For the identification of gifted children, the individualized perspective should take precedence in any case. In addition to more valid tests, a multi-step procedure - instead of a one-step procedure - can reduce the risk of incorrect decisions; this may, however, make complicated identification designs necessary. When (multi-factor) classification or cluster analysis approaches are to be used, a high degree of reliability and validity should be achievable - for the individual diagnosis as well as in the talent search (group test).

Before the age of four years, it is difficult to make reliable judgements about (later) development. The available tests for gifted pre-school children are often too easy (ceiling effect) and/or have limited content validity. According to Casey & Quisenberry (1982), highly gifted children often identify themselves through their *precocity*. Bartenwerfer (1978) listed the following characteristics as a basis for observing whether *young children* are unusually talented: a large vocabulary as compared with age mates, appropriate use of words not typical of age, uses complex sentences, learns easily/rapidly, partial early reading or learning of material a year earlier than normal, as well as strong curiosity. For *older children* and *adolescents*, Bartenwerfer (1978) listed the following indicators of giftedness: very high scholastic achievement, well-defined extracurricular activities and interests, often negative or expresses doubt in class, and uses much fantasy and creativity. Freeman & Urban (1983) observed that almost all children who were identified because of their high IQ score, grew up in especially nurturing family settings. Thus, one should realize that giftedness should not be measured solely through achievement criteria, which may be influenced by the quality of the home but should be measured with instruments that are not so influenced.

In addition to *standardized tests*, parent and teacher *nominations* have an important function in the identification of gifted children and adolescents. In contrast to achievement criteria (e.g. intelligence test or achievement test variables, school grades), which often ignore creativity aspects, ratings based on *checklists* (with operationalized characteristics of giftedness as concrete behavior indicators) often give much more comprehensive information. The bandwidth-fidelity dilemma (Cronbach & Gleser, 1965) which arises here, can be minimized when a screening is carried out first, using the less reliable instruments (ratings, checklists, nomination, etc.). In the following steps more accurate measurements/tests are employed (cf. Chapter IV, figure 3 and Chapter V, figure 1).

For younger children, parent nominations seem to be superior to teacher nominations. Teacher nominations are, however, useful for older students (cf. Chapter III). Nevertheless, Freeman (1979) found that students who were designated as gifted by their parents, were much less satisfied in school and less emotionally stable than their equally talented classmates. In order to avoid such problems, it is recommended that a combination of different approaches to identification be employed: multi-dimensional intelligence and creativity tests, questionnaires, and checklists to determine cognitive and non-cognitive personal characteristics and environmental variables. For older students, *self-nomination* can also be used to identify the gifted. *Competitions* have also proven effective, for example, the German competition 'Mathematics' or 'Jugend forscht' (Youth researches). This effectivity is at least partially due to their motivational characteristic (Dahme, 1981; Howe, 1982). The labeling problem linked to this will be discussed below. First, current European research projects are presented.

2. Three Current European Studies on the Highly Gifted

In the Dutch study by Mönks et al. (Chapter III), previously mentioned, a representative sample of secondary level students (12- 15 year olds) was studied regarding the following questions: 1) How can highly gifted students best be identified, which behaviors are characteristic? 2) What is the social-emotional situation of gifted students in academic secondary schools (i.e. college prep schools) and how is it different from average students? The following components were considered prerequisites to be identified as 'gifted': above-average intelligence, high achievements, goal-oriented, and creative behavior. In the first phase of the study, giftedness was determined using various instruments (self- and peer-nomination, tests, and questionnaires). In the second phase of the study, the parameters of giftedness were further refined and applied in various control situations in order to develop an accurate instrument. The third phase was concerned with the students' behavior in the classroom, e.g. what view do they have of their position in the class?

The results of the three study phases can be summarized as follows. Multi-talented gifted students prefer independent learning styles and 'creative' work, and they dislike rote exercise forms. Further, they demonstrate a positive social self- concept, but with regard to their general self-concept and the construct locus of control, no major differences were found – among talented students, average peers and gifted underachievers. Nonetheless, *talented underachievers* had a significantly higher *external* locus of control score and demonstrated higher test anxiety. In addition, they are characterized by a negative view of themselves regarding their own talent and academic capability as well as a negative attitude toward school and low achievement or academic motivation. They are rated by their classmates (achievers) as asking for more assistance more often than they offer advice or assistance. According to Mönks et al., teachers are able to identify gifted underachievers in their classroom. A selection strategy was used to select highly gifted relative to their class.

With financial support from the Federal Ministry of Education and Science in Bonn, the Department of Psychology of the Universtity of Munich, under the direction of the first author, a research project has been studying the topic 'Forms of Giftedness in Children and Adolescents' since 1985 (see Chapter IV). Goals of the study being carried out in several regions of West Germany are: 1) the development and trial of a differential diagnostic instrument battery for the valid and reliable identification of gifted children and adolescents using a typological approach; 2) the description and causal analysis of achievement behaviors of highly gifted students with regard to the varying situational challenges; 3) developmental and psychological observation of the careers of highly gifted children and adolescents focusing on socialization influences (Heller et al., 1984, 1985).

The multi-dimensional giftedness concept on which the study is based, is comprised of, in addition to intelligence, creativity (in the sense of Guilford or divergent-convergent problem solving), social competence, musical talent and psychomotor/practical talents (cf. Khatena, 1982). The postulated causal model of valuable achievements also contains achievement-relevant, environmental, and non-cognitive personality characteristics (e.g. achievement motivation, self-concept, interests, and study and coping strategies). Related problems of creating indicators and the multi-step screening and selection procedures are described in detail.

The second part of the project is planned as a longitudinal study over (initially) four years with yearly measurement. In a double-blind study, the careers of 900 highly gifted and 900 moderately gifted students, ages 4 to 14 (or 18 years respectively), are to be analyzed according to developmental psychology and socialization theory viewpoints. Relevant problems of the combined cross-sectional-longitudinal design are discussed as well as implications (of the expected results) for *counseling and educational nurturance.*

Corresponding curricula must also be developed for the preparation of psychologists and teachers for guidance of the gifted. This is, however, a long-term goal. This leads to the task of sensitizing gifted children and their parents, teachers and peers to questions of giftedness and to develop psychopedagogic aids for dealing with their problems. Specifically this means:

(1) Parents should be informed about the talents and the problems of their gifted children and aided in fostering talent at home.
(2) Parents and children should be given guidance in selecting schools. This should be based on talent and aptitude diagnoses.
(3) Highly gifted adolescents should be given the chance to gain and broaden their knowledge base through contact with experts and others with interests in the same fields.
(4) Teachers and trainers should be taught how to develop giftedness.
(5) Highly gifted adolescents should be given emotional support and helped

to achieve autonomy, especially in dealing with psychological problems (e.g. finding their identity).

(6) Highly gifted adolescents and adults should be trained in those skills which are necessary for them to find a job suited to their talents and interests (i.e. finding information, decision-making skills, job interview skills).

(7) Highly gifted children and adolescents with behavior problems or social conflicts should be counseled and, if necessary given therapy. Cooperation among pediatricians, psychiatrists, counselors and psychologists is necessary.

(8) Creative youth should be armed with those psychological competencies that are necessary for following through on an idea (i.e. self-assurance, perseverence, attractive presentation of self, work habits which do not endanger one's health, openness to social phenomena).

(9) Information meetings about the problems of the highly gifted should be offered to parents and teachers of gifted children and adolescents as well as the interested public (cf. Chapter XI of this book for more complete detail about this).

The identification procedures not only contribute to the counseling and guidance of the gifted, but are also essential to the selection of highly gifted applicants for scholarships, etc. For this purpose, the German National Scholarship Foundation *(Studienstiftung des deutschen Volkes)* in Bonn has conducted research on especially talented seniors in academic high schools (Abiturienten), discussed by Trost in Chapter V.

The report deserves special attention for several reasons: 1) It deals with the largest academic support program in the Federal Republic of Germany (presently 4,500 students are supported by the foundation, which represents 0.5% of all West German university students), 2) since 1970, i.e. since the program was founded, 45,000 high school graduates have taken part in the selection process, and 3) a quite broad and detailed battery of instruments was used in the identification process. The multi-level selection process can be seen in Fig. 1 (Chapter V). Based on the results of this research so far, the author recommends a multi-level identification process. This entails a combination of achievement evaluation, standardized cognitive ability tests, and judgements concerning the candidate's relevant personality traits as well as social behaviors in individual discussions and in group situations.

3. Educational and Social Psychological Problems of Identifying and Fostering the Gifted

Whereas the previous contributors emphasized the necessity of a formal identification process for locating gifted students, Shore & Tsiamis attempted in a

Canadian study to prove that an *open door program* as suggested by **Birch** (1984), leads to reliable identification of the gifted (Chapter VI). They coined the term 'identification by provision' for their alternative.

One hundred seventy-four students from the ages of 9 to 13 years were studied (grades 4 to 8). They attended a summer school for the gifted at McGill University (a group of untested students, admitted on the basis of nomination by parents) and a Montreal suburban school (group of tested students). No significant differences could be found between the groups on tests of creativity and intelligence as well as measures of personality. This led the authors to the conclusion that both methods are equally efficient.

Even when the parent nomination seemed to have been as accurate as teacher nomination or school and psychological testing in the identification of highly gifted students, the authors also recommend caution: first, the sample groups are not exactly comparable; second, the artifacts of voluntary participation and the course tuition were not controlled; and third, the representativeness regarding the quality of the diagnosis process appears not to be equivalent to other identification procedures (as they are presented, for example, in Chapter III-V). Although **Shore** and **Tsiamis** recognized a number of advantages in the identification by provision, they warn against devaluing 'traditional' methods of identification and recommend the continued use of methodically reliable field studies.

The identification of the gifted raises not only a number of questions about methods, but also the social-psychological matter of *labeling*. **Robinson** evaluated the (American) literature on this subject. In the majority of the empirical studies the following results were obtained (cf. also **Freeman** & **Urban**, 1983).

The gifted themselves and their teachers and classmates tended to react positively to the label 'gifted', but at the same time the nongifted siblings as well as psychological counselors were more likely to react negatively. The reactions of the American teachers, on the other hand, were not uniform, with some reacting positively and some reacting neutrally to gifted students (cf. Chapter VII).

In a related situation, a very recent polling of 1,200 American and German teachers at the secondary level, as reported by **Dahme** (1985) and by **Busse**, **Dahme** & **Wagner** (1986) is interesting. The authors discovered that 1) for German teachers, the label 'gifted' was more strongly associated with socially desirable traits (from cognitive areas as well as from social and personal areas) than the labels 'highly intelligent' and 'very creative' were; 2) American teachers view giftedness in a different way than do their German colleagues; 3) all German and American teachers believed that they cope well with their gifted students. This result contradicts, however, other reports and practical experience in counseling of the gifted, especially with regard to younger children or primary school teachers; 4) German teachers support the idea of fostering highly gifted children within the school context (here the 'Gymnasium') but their American colleagues were more in favor of out-of-school provisions; 5) in both countries they would rate teacher characteristics and family nurturance as more important than preschool and school provisions for giftedness. Finally, Dahme (1985) points out that the label 'highly gifted' is used less in the USA than in Germany.

The following contributions concern themselves more with questions about fostering and educating the gifted. Jellen & Gulley (Chapter VIII) demand culture fair selection of the gifted and qualitatively differentiated content, methods, and evaluation. This model contributes to the development of the entire personality and also to knowledge and idea production.

The concept suggested by Jellen (1981) for the fostering of giftedness is based on the DEG-taxonomy which is based on Ward's concepts and principles (1961, 1980). Twenty-one key oncepts for the culture fair identification the gifted are used in the *DEG-taxonomy* (DEG = Differential Education for the Gifted). A corresponding curricula is also proposed. The authors discuss the model in detail in this chapter.

4. Promotion of Giftedness in a Socialist Perspective

The contributions in Chapter IX and X are concerned with the promotion of giftedness in a socialist country. First, Pék describes the competition system for gifted students in Hungary. Since the sixties, a competition has been held to locate especially gifted students. There are competitions in all school subjects as well as many extracurricular activities. He discusses the questions: 1) What possibilities for early identification of gifted students does the competition system offer? 2) How can one promote giftedness and at the same time guarantee equal opportunities for all? 3) What direction is the gifted student going? The psychopedagogic conception of the competition system and the effects it has on personality development are also discussed. In addition, questions relevant to the society and to educational policy are raised (cf. Chapter IX).

Following this, Báthory (Chapter X) explains the talent education approach in Hungarian schools. After explaining certain concepts and giving a brief historical overview, he presents the results of studies on the effectivity of school systems in 19 countries. He then gives his opinion about why talent education has not occured in Hungary and describes some factors that typify the present system as demonstrated, for example, by a competition between schools proving that certain schools or teachers generally produce better students than others. Báthory describes some of the problems which are connected with talent education and recommends differential education as a means of overcoming the difficulties and shortcomings which are inherent in the school system.

5. Clinical and Psychological Counseling Problems

In addition to fostering the academic programs for gifted students in school, psychological counseling is often indicated. Here again, the necessity of early diagnosis of giftedness becomes apparent. When schools fail to provide for and educate the gifted, the risk of psychiatric problems especially, when the above occurs in combination with low economic status, is high. According to a study by Schmidt (1977) on the *clinical problems* of behaviorally problematic children with great talent, children whose mothers went from a lower social level to a higher and whose parents showed a lack of child-centered attitudes, suffered the most problems. According to Feger (1981), counseling is also necessary for disturbed parent-child relationships in the following circumstances: indifferent parents who reject their children and psychologically disturbed parents.

Gowan & Demos (1964) listed the following conditions as causing a great deal of *stress* for the gifted: lack of challenge (especially in primary school), lack of contact with mental age peers, lack of information about appropriate activities, boredom and impatience in class, lack of motivation, resistance to conformity, and independence in thinking and judging (as a trait of giftedness), perfectionist tendencies, etc.

Fox (1982) summarized the situation of *highly gifted girls,* based on many years of observation at the Johns Hopkins University in Baltimore, as follows: mathematically talented girls demonstrated less self-confidence than equally talented boys; are less supported by their parents, teachers and peers; regard mathematics as less important; and have less clear future goals. Furthermore, they are less willing to take intellectual and academic risks; their values, interests, and expectations correspond less to their abilities than those of their male counterparts. Thus the call for counseling services for girls should take their specific problems into consideration. These problems arise because of *sex role stereotypes* and because of *unfavorable social conditions* in socially disadvantaged families. Therefore, directed counseling of gifted children and their parents is necessary and according to Branch's (1976) experience, is welcomed in many cases. Above all, parents and educators should be made aware that children they consider to be difficult could also be gifted.

Further target groups are disadvantaged children who, due to geographic-environmental factors and/or economic factors, because of a problematic situation at home, or because of physical or psychological characteristics which inhibit the development of their talent, need special help. Feger (1981) also pointed out one very neglected group - the children of foreigners *(Gastarbeiterkinder).* The two last contributions to this book are dedicated to this topic of counseling the gifted.

To begin with, Feger & Prado (Chapter XI) report in detail about the first Information and Counseling Center for the Gifted in West Germany (in Hamburg). After an overview covering the functions of the Hamburg counseling center and a description of the clients, the most common occasions of counseling as well as the task and problem areas dealt with are briefly outlined. Two case reports (Tim and Christina) exemplify the practical work. Helping problem cases, as experience clearly demonstrates, is dependent on the professional competency of the counseling personnel. FEGER & PRADO, at the conclusion of their article, emphasize the following *requirements for counseling personnel:*

(1) in-depth knowledge of the important literature on giftedness (research) and the ability to make recommendations for the actions of parents, teachers, and other students and for the gifted person;

(2) thorough knowledge about the school system and its varieties of organization, legal aspects of program services (e.g. advancement rules, choice of subjects, etc.), and curricular demands of the different types of schools, and possibilities for extracurricular activities in specific cases; psychologically significant in this context is knowledge about details of the school systems in other states, in city and country regions, and also in larger regions or districts - about the prerequisites, school and eductional climate, and attitudes toward gifted children and adolescents;

(3) positive relationships not only with the clients (children and adolescents, teachers, and parents), but also with other persons and institutions who are concerned with the gifted. As long as work in this field is pioneering in nature, close cooperation with all those involved and who show interest is desirable. This should include parent and teacher initiatives, which - as experience shows (cf. WEBB, MECKSTROTH & TOLAN, 1984/85) - should not be organized without sufficient psychological supervision. Only then is it possible to maximize the help while at the same time minimizing undesirable side effects (cf. Chapter XI).

In the following contribution (Chapter XII), SCHMIDT & DETZNER pursue the question of whether highly intelligent children and adolescents are especially vulnerable to the development of *anorexia nervosa.*

Whereas in epidemiological studies, no increased risk could be proven for the development of psychiatric disturbances in gifted children (which, however, could be due to the low prevalence of giftedness and psychiatric abnormalities), there were some indications from the utilization study that a generally higher risk exists as well as a higher risk for specific psychiatric illnesses. In this study at the University of Heidelberg/Mannheim which is presented here, highly intelligent child and adolescent patients were matched with a control group of normally intelligent patients on age and sex. A comparison of the two groups showed significant differences in the frequency of occurence of anorexia nervosa. These results and clinical experience indicate that highly intelligent children and adolescents are especially vulnerable to anorexia nervosa. One possible explanation could be the largely cognitive control which the highly intelligent have, which is thought to play not only a large role in the development of the illness but also in the way therapy progresses. Therefore, overcoming this predominant cognitive control is an essential factor in the therapy process. Implications of these results for the pathology, treatment, and prevention of anorexia nervosa are discussed.

Summary

Overall this volume of papers is concerned with the problems of identifying and nurturing 'giftedness'. When the focus is on the problem of identification, important contextual conditions should also be dealt with. The process of identification cannot be separated from educational and training questions or causes for counseling which are specifically related to giftedness. Important questions dealt with in this book are thus the following: 1) What is empirically to be understood under the term giftedness and how is it theoretically and practically defined? 2) How can highly intelligent children and youth be reliably and validly identified; are there undesirable side-effects (e.g. labeling problems)? 3) Which pedagogical fostering possibilities are available and what psychological or clinical problems do the highly gifted have during socialization and development?

These and similar questions were discussed in detail by experts within the framework of a symposium at the 6th World Conference on Gifted and Talented Children in Hamburg, 1985. The symposium was not only very well received by the conference participants, but its results should be interesting to everyone who wants to know the latest information related to phenomena and developmental conditions of the highly gifted. The complete symposium contributions are therefore – as requested by many – presented in the following volume for a wider public.

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CHAPTER II

A Conception of Giftedness

John F. Feldhusen

There is much speculation about the components of giftedness. All such speculations are based on the assumption that giftedness and/or talent consist of relatively stable, perhaps genetically determined, characteristics of individuals, that such characteristics can be conceptualized and measured or assessed at points along the way in the growth of individuals, and that the growth of those characteristics may portend high level productivity or creative achievement at some later point in time in the life of individuals. All of these assumptions more or less ignore chance factors or events that operate throughout the lives of human beings and which may be major determinants of productivity and creative achievement.

1. Models of High Giftedness

TANNENBAUM (1983) is one of the few theorists who has explicitly included chance factors in a *psychosocial definition of giftedness* which otherwise includes a) general ability, b) special abilities, c) nonintellective factors, and d) environmental factors. With the latter, environmental factor, TANNENBAUM reminds us that gifted achievement or productivity is potentially influenced in many ways by the social, intellectual, and physical environment which impinges on an individual.

Surely the most well known conception of giftedness in the United States and possibly throughout the world is RENZULLI three-ring view of giftedness (cf. figure 1, in chapter III). In a now famous publication in 1978, RENZULLI asserted that the major determinants of gifted behavior are *above average abilities* or talents, *creative capacities*, and *task commitment*, the latter term perhaps taken most directly from the work of NICHOLLS (1972). This conception has proven to be a workable, applicable definition for practitioners who are involved in developing and conducting educational programs for gifted youth. The conception of task commitment has been particularly attractive to those who view gifted behavior as an 'on again, off again' phenomenon. Thus, the well known RENZULLI's et al. 'Revolving Door' identification model (1981) proposes that there are times of high task commitment and times of low task commitment, and these are associated with high and low productivity. Educational programs for able youth should be prepared to offer special facilitating experiences for youth when task commitment is high and to 'revolve' youth out of special program services when a task activity is completed and task commitment subsides.

The motivational components of giftedness had been identified by Galton (1869) and Terman & Oden (1959). However, their conception of motivation focused more on the traits of persistence, drive, energy and interest and less on the conception of periodic bursts as the task commitment construct implies. *Motivation* is, of course, properly viewed as a combination of internal predispositon to initiate, sustain and terminate behavior as well as external stimulating conditions which activate, sustain, or depress behavior. Thus, properly conceived, motivation is a combination of internal and external (to the individual) factors.

Self conception and *self esteem* are probably major influences which impel an individual to work, to investigate, to learn, to solve problems, to strive to achieve, to compete. Feldhusen (1986) reviewed self concept and self esteem aspects of gifted and creative individuals and suggested that self conceptions should be viewed as components of giftedness and/or talent. Perhaps it would be better not to imply a homunculus within the individual called 'giftedness' or 'talent' but rather to assert a set of psychological predispositions or characteristics which are associated with gifted or talented performance. Self concept and self esteem may then be viewed as correlated conditions which, when accompanied by other psychological conditions in the individual and external facilitating factors, may give rise to gifted and/or talented behavior.

In this whole framework of conception one must surely also pay close attention to Gardner's (1983) *theory of multiple intelligences* and Sternberg's (1981) *componential theory of intelligence and giftedness*. From Gardner we have a) linguistic intelligence, b) musical intelligence, c) logical mathematical intelligence, d) spatial intelligence, e) bodily kinesthetic intelligence, f) access to one's own feeling life, and g) ability to notice and make distinctions among individuals. While little empirical support is offered for the *Frames of Mind*, the arguments presented by Gardner are persuasive and generally consistent with theories of intelligence derived from factor analysis. To a great extent the 'frames of mind' seem to be synonymous with aptitudes or talents.

Sternberg (1981) views all of the *components of intelligence* as information processes or as metacomponents of cognitive control. Gifted individuals excel in the following six components:

(1) decision as to just what the problems are that need to be solved,
(2) selection of lower order components of problem solving,
(3) selection of strategies for solving problems,
(4) selection of representations for information,

(5) decisions regarding allocation of componential resources in problems solving,
(6) solution monitoring in problem solving.

The *metacognitive processes* are:

(1) inference, detecting relations between objects,
(2) mapping, relating aspects of one domain to another,
(3) application, predicting on the basis of perceived maps,
(4) comparison, the examination of a prediction in relation to alternative predictions,
(5) justification, a process of verifying options,
(6) response, communicating a solution.

Perhaps the major conclusion to be drawn from the work of GARDNER and STERNBERG is that the characteristics or set of traits which we have called intelligence and have viewed as a homunculus or entity in the individual is really a complex set of psychological phenomena which may emerge as powerful combinations in some individuals and give rise to highly effective problem solving behavior, creative production, or performances.

There is no theory of special talents although the multiple intelligences of GARDNER imply special talents or abilities. RENZULLI (1979) also recognizes the ability ring as including quite specialized talents, skills or aptitudes. Aptitude test theory, largely derived from factor analysis, also implies special, narrower abilities in the constructs which aptitude tests measure. TANNENBAUM (1983) also set forth a theoretical conception of talents which included 1) scarcity talents, 2) surplus talents, 3) quota talents, and 4) anomalous talents. *Scarcity talents* are those abilities possessed by great leaders in science and politics which are desperately needed by society to solve problems. *Surplus talents* are those abilities possessed by people, especially in the arts, which, while not desparately needed to solve problems, make life better for others. *Quota talents* are the abilities which make possible the skilled or professional behavior of a large number of leaders in our society who otherwise make minimal creative contributions. *Anomalous talents* are narrow but superior skills such as superior marksmanship, speed reading, etc. They are chiefly a benefit to the talented individual who possesses them.

2. The Conception Which Emerges

Our own view is that giftedness will usually consist of superior general abilities from the catalogs proposed by STERNBERG (1981) and GARDNER (1983), special focused talents which predispose an individual to high level achievement within one area of human endeavor, a conception of self which views high level creative achievement or production as attainable, and motivation to learn and achieve. The ability to think well, to process information effectively, to achieve insights and solve problems, and to use efficient metacognitive processing systems, as proposed by Sternberg, is a part of the complex bundle called general abilities. It underlies giftedness in all fields.

The field of gifted education is obsessed with finding measurement procedures which can be used to identify those few youths who are 'truly gifted' and/or destined to high level, creative achievement in adulthood. Given that a number of the components of giftedness are highly modifiable and subject to change as youth grow and develop, a wiser educational strategy might be to try to optimize the growth of the components of giftedness in as many individuals as possible. Thus, identification procedures and educational programs might seek to be as inclusive as possible and to offer multi-level and multi-service programs to meet the needs of a large number of potentially gifted youth. In addition to offering excellent intellectual and/or artistic growth experiences for gifted youth, much more attention should be devoted to the provision of instruction in special talent areas starting early in the life of a child. Bloom & Sosniak's (1981) recent report of the genesis of talent in high achieving adults indicates that talent focus was achieved in childhood, and there was a steady nurturance of talent starting early in life.

The self concept and motivation factors should probably never be identification factors for gifted programs but they should be goals. Gifted youth should have the opportunity to explore and clarify their conceptions of their own abilities, talents, and potentials, and to become aware of appropriate higher level career opportunities. Hopefully then there emerges a conception of self which envisions high level accomplishment as possible. Such a conception must then be united with motivation to strive for high level goals, to accept the demands for hard work, and to see the need for intensive energy output. Gifted youth need demanding teachers, coaches or mentors who will help them learn to think hard, work hard, stick to tasks, practice long hours, and strive for excellence (Bloom, 1982). Hopefully this motivation leads to intensive interest and task commitment in specific areas of talent development.

It is difficult to develop good programs for the gifted in public school settings. School programs are designed chiefly to serve the needs of students whose abilities cluster around the mean or are below average. The needs of gifted youth are diverse and intense and call for accelerated, enriched, and individualized programming. *Special talents call for especially skilled teachers, coaches, and mentors.* At the elementary level academically gifted students should probably be taught in separate, full-time self contained classes or magnet schools, and those who have special talents should have access to talented mentors, coaches, or instructors. Others who do not have access to such classes should be allowed to skip grades if their skill levels exceed their chronological age-grade placement. At the secondary level special schools are desirable, but failing that, a combination of accelerated, enriched, and grouped classes can provide the stimulus and challenge of a good education for many gifted youth.

Acceleration means that gifted youth can take courses one or more years ahead of the normally scheduled year and that they can graduate ahead of schedule. *Grouped classes* are sometimes called honors classes in the United States. They offer gifted youth an opportunity to study with and be challenged by intellectually gifted peers, enriched and accelerated curricula, and a teacher trained to work with gifted youth. *Enrichment* means that the content of a course is taught along with a substantial amount of higher level cognitive experience such as problem solving, inquiry, discovery, experimentation, research, independent study, etc., as well as horizontally extended content.

Summary

Gifted and talented youth are characterized by superior general ability or intelligence, special aptitudes and/or talents, self concepts which recognize and accept the special ability and talent, and high level motivation to learn and to achieve. General ability in childhood evolves toward special talent in adolescence. High level adult achievement in any field requires development of the special talent or aptitudes requisite for that field. Gifted youth must also come to recognize, accept, and feel positive about their special talents and elect to pursue their development. Motivational characteristics can evolve through the development of intrinsic interest and task commitment in the talent area. Gifted youth must also develop drive, energy and persistence in their quest for achievement in the talent area. Schools should recognize the need to provide opportunities for the gifted youth to be grouped in special classes, to be accelerated through the regular curriculum, and to have a wide variety of enriched learning experiences. The needs of gifted youth are diverse and call for multi-service programs of services.

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CHAPTER III

The Identification of Gifted Children in Secondary Education and a Description of Their Situation in Holland

Franz J. Mönks, Herman W. van Boxtel, Joop J.W. Roelofs & Marcel P.M. Sanders

Introduction

The aim of this article is two-fold. In the first place, it will inform the reader about the research project dealing with possible ways to identify gifted children in the first three classes of secondary school (age 12–15) and give a description of some characteristics of their social-emotional situation. For that purpose we want to pay attention to the theoretical background of the research, the variables which are considered important, the way they were measured and the way the research was designed and carried out.

Second, we will present some preliminary results of the research project which will form part of the final report.

The article is divided into two parts: 1) a survey of the research project and 2) some preliminary results. The purpose is to give an overview of the empirical approach and its theoretical background, and also an insight into possible interpretations of the results.

1. Survey of the Research

1.1 Research Questions

In the research project two main questions were asked:

(1) In what ways can gifted children be discovered in the first three classes of secondary education, and how can we get indications for differentiated educational programs for these students?
(2) How can the social-emotional situation of gifted students in the first three classes of secondary education be described?

In the scope of both of these main questions, a number of variables were selected and measured. We shall discuss these variables and the way the data were gathered and analyzed.

1.2 Starting-points for Definition and Identification

It is evident that giftedness can be defined in many ways and that many different identification procedures can result from each definition. As a starting-point for identification the ideas from Renzulli et al. (1981) have been used. In the first place, Renzulli assumes that manifest, exceptional creative-productive behavior will be shown only by an individual when three components are working together: 1) high, but not necessarily extremely high, intellectual capacity, 2) creativity, 3) task commitment.
This interaction is expressed by Renzulli in his three-ring-model (figure 1). Gifted behavior only arises when an individual "gets his or her three rings together".

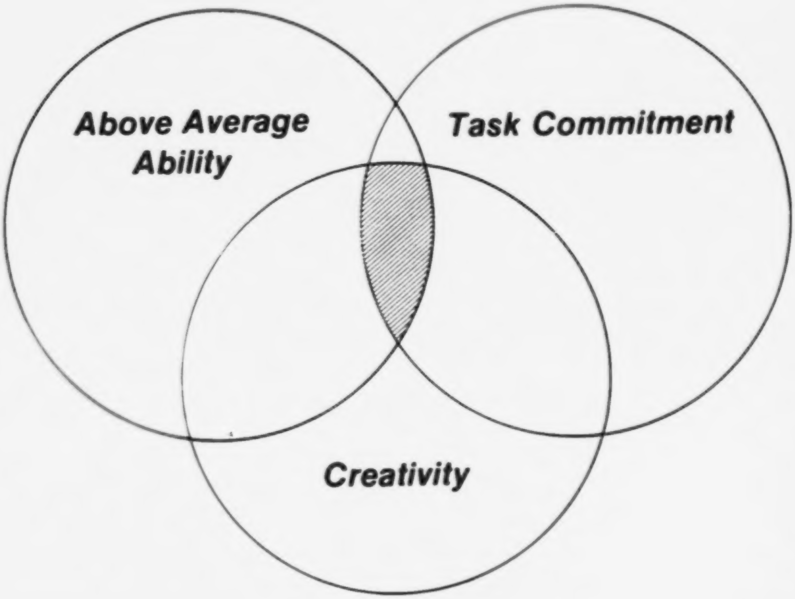


Figure 1: Three-ring-model of giftedness by Renzulli (1978)

In a lot of research, giftedness is wrongly put on a par with a high or extremely high IQ (e.g. higher than 140, or the top 2%). High *intellectual* capacity can be seen as a necessary, but not as a sufficient condition for exceptional achievements. There is no direct connection between a high score on an intelligence test and accordingly high achievements.

It is not easy to say exactly what *creativity* really is. This concept is used to define different constructs (sometimes together): the term 'creative' can refer to a person who shows a certain behavior, to a product, but also to the way in which the product has been made. In our conception, creativity relates to the flexible and inventive way in which solutions for problems are found and how they are put to use. Indications for creativity can be found in the originality of new and unusual solutions, in the approach of a problem from different points of view, and in the different ways in which solutions are attained.

A third important factor is the ability to exert oneself and to achieve what has been planned. Time and again perseverance, willpower and unceasing diligence *(task commitment)* have proved to be of great importance in realizing great achievements.

The three factors mentioned above are not considered to be one-dimensional skills, but clusters of connected variables, in which different aspects are prominent. Eagerness for knowledge and the motivation to acquire new knowledge can be considered as variables associated with the cluster of creativity as well as that of task commitment.

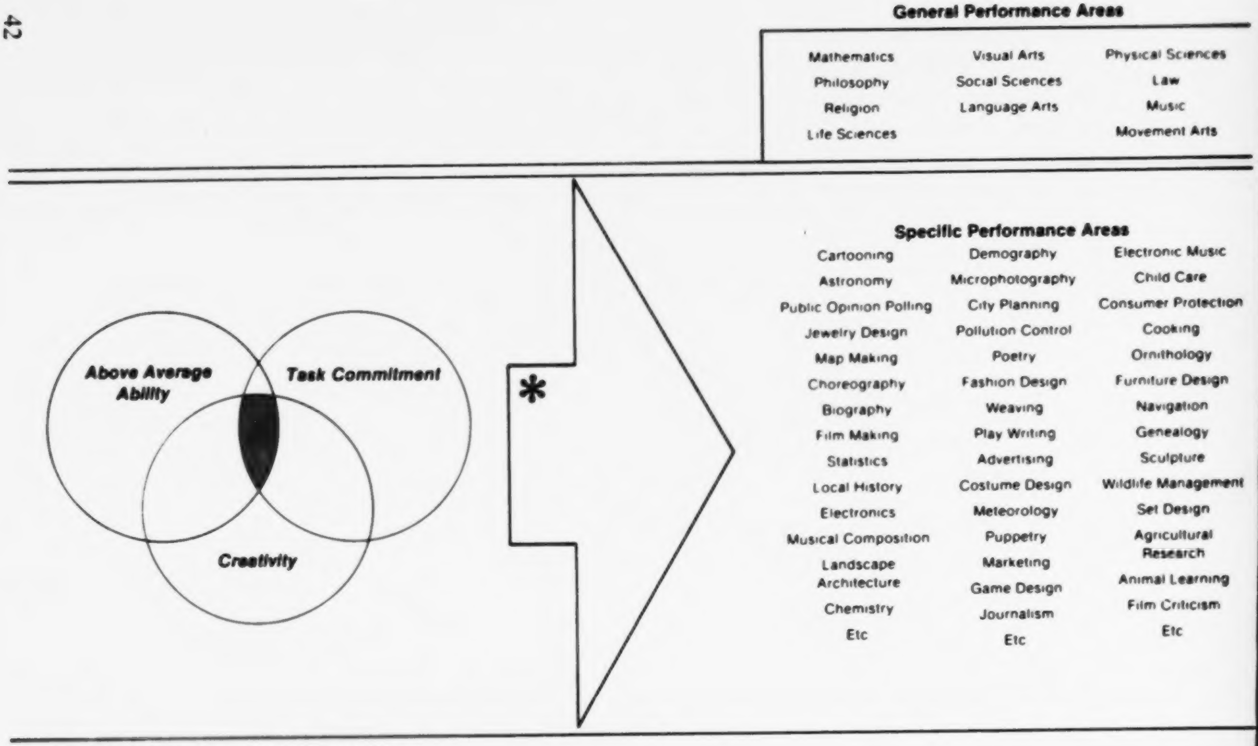
A second starting-point of Renzulli is that one has to proceed with great caution in the identification of gifted children. The most important consequence of this is that data related to the clusters mentioned above have to be gathered from as many information sources as possible. Some useful information sources are the students themselves, their peers, teachers, and parents. It is also important to use different data-gathering techniques for different information sources, such as psychometric tests, questionnaires, rating scales, observation techniques and product-evaluations.

A final starting-point is that giftedness can be shown in many ways. The three factors mentioned above can be used and made efficient in almost every situation or area of performance. It is not of primary importance for Renzulli whether the chosen activities relate to academic or non-academic subjects (a distinction that is made continuously in the research about giftedness). In figure 2, an impression is given of the variation of the performance areas in which giftedness can be expressed.

In summary, we want to consider the next definition as a basis for the investigation of identification procedures for gifted adolescents:

> "Giftedness consists of the interaction among three basic clusters of human traits - these clusters being above average general abilities, high levels of task commitment and high levels of creativity. Gifted and talented children are those possessing or capable of developing this composite set of traits and apply them to any potentially valuable area of human performance" (Renzulli et al., 1981).

This three-ring conception of giftedness can be useful as a starting-point for the identification of gifted students. In 1.5 it will be argued that an extension of this model to include the social environment can be used as a basis for the description of the social-emotional situation of gifted students.



*This arrow should be read as "brought to bear upon"

Figure 2: General performance areas of giftedness by RENZULLI et al. (1981)

Another research question is related to the comparison of two different approaches of identification. The first one can be called the 'relative approach' of identification, of which RENZULLI seems to be a strong advocate: giftedness is seen first of all as being related to a certain and real educational situation (school or class). For this reason we have tried to get a good representation of the different school levels in Holland and our screening was primarily done for each class separately. In this approach, the emphasis is on internal differentiation (within a real class) and on a description of the social-emotional situation of gifted students concerning their special position in relation to their (less able) classmates.

The second approach can be called 'absolute': Here giftedness is defined by absolute criteria; with this procedure the screening is done by absolute criteria for the whole sample, without any reference to school type or class. With respect to the social-emotional situation, the emphasis here is more on the description of personality characteristics of these absolutely gifted children, as compared with their less able 'education mates'.

1.3 The Screening of Gifted Students: Variables and Instruments

Based on the definition, the variables and the information sources mentioned above, the first goal of this research project was to explore the connections between the different variables and data sources, and the effects of using specific variables and data sources on the composition of the student groups resulting from the screening process (the students considered to be gifted). This is important because (still based on RENZULLI) it is this group (the so-called 'talent pool') which will receive special attention and differentiated educational programs.

In the scope of the question mentioned above, instruments were selected and constructed which had to meet the following criteria:

- adequate measurement of the variables,
- useful in educational practice,
- guarantee comparability with similar research executed at the University of Utrecht (Holland).

We shall discuss the screening of the instruments in a condensed form.

1.3.1 Intelligence Structure Test

For the age group (age 12-15) of this research project, no adequate Dutch general intelligence test could be found. For this reason we have chosen the more difficult method and translated and adjusted the *Intelligenz-Struktur-Test (IST-70)* by AMTHAUER (1973). In nine subtests, the following abilities were measured: power of abstraction, inductive linguistic reasoning, power of judgement, ability to combine, practical arithmetical thinking, inductive reasoning with numbers, imaginative faculty, visual-spatial ability and memory (AMTHAUER, 1977).

1.3.2 Raven Standard Progressive Matrices

The RAVEN Standard Progressive Matrices (RAVEN, COURT, & RAVEN 1979) is a nonverbal measure of general intelligence, especially the g-factor (de ZEEUW, 1981). It was primarily meant as a supplement to the IST and a parallel to the Utrecht research project.

1.3.3 Utrecht Test for General Knowledge

This test was also included in this research because of its use in Utrecht. The questions (multiple choice and open-end questions) are related to the components of the 'Structure of Intellect' model of GUILFORD (JANSEN SCHOONHOVEN et al., 1985).

1.3.4 Measurement of Inquisitiveness Questionnaire

This questionnaire 'Fragebogen zur Erfassung des Erkenntnisstrebens' (LEHWALD; in GUTHKE & WITZLACK, 1981) of 41 items is considered to be a measure of inquisitiveness. The items and the factors found by factor- analysis point out components such as achievement and problem- solving, and interest in independent gaining of knowledge. This instrument seems to get at the idea of task commitment (van BOXTEL et al., 1985).

1.3.5 Creativity Questionnaire

The validity of creativity measures, and especially tests, is a much disputed matter. The most practical solution seemed to be a collective paper and pencil test with mainly precoded items. This would almost automatically lead to a strongly verbal test such as the Test of Creative Potential from HOEPFNER & HEMENWAY (1973), which shows a very narrow scope on creativity. The enforced character of 'creativity productions' at a certain time and in a certain place (e.g. a classroom) was not considered an appropriate procedure either. This made us choose the construction of a questionnaire with the following guidelines:

- cover the entire area from potential to actualization - the different levels of creative manifestation: personality characteristics, general interests, specific interests and needs, passive practice (e.g. visiting a concert) and actual activities;

- cover the different levels of manifestation of creativity (passive needs, passive practice, reproduction, original creation);
- cover the breadth and depth of individual interests and activites;
- use different empirical and theoretical bases.

This resulted in a questionnaire with 154 multiple choice questions and five-open ended questions. For this questionnaire we used 18 items from the 'Alpha Biographical Inventory' (IBRIC; 1968), 28 items from the questionnaire 'What Kind of Person are You' (WKOPAY; Khatena & Torrance, 1976), 45 items of the 'Skala Schöpferische Tätigkeiten' (SST from Lehwald; in Guthke & Witzlack, 1981), 17 items of some questionnaires from Renzulli et al. (1981), 12 items from Smith & Carlsson (1982), and 39 items which we constructed ourselves.

1.3.6 Scale for Rating the Behavioral Characteristics of Superior Students

This rating scale (SRBCSS; Renzulli, Hartmann & Callahan 1971), which is meant for teachers, consists of 37 items which are related to important characteristics of superior students, as they are found in the research literature. These items are divided into four subscales: learning characteristics, motivation, creativity, and leadership.

1.3.7 Supplementary Questionnaire for Teachers

As a suppplement to the SRBCSS, a questionnaire for teachers was constructed which related to the following elements:

- the assessed possible actual general academic achievement level (assessed by the teachers),
- the factors which were involved in the judgement of these levels,
- grades,
- information about extraordinary skills of the students.

1.3.8 Self-nomination Form

This questionnaire asked students to rate themselves on general intelligence, creativity, perseverance and leadership qualities, creative hobbies, activities in leisure time, and achievements in some school subjects.

1.3.9 Peer Nomination Form

Students were asked to nominate their classmates on the basis of a number of personality characteristics (related to e.g. learning speed, creativity, and achievement motivation). The basis for this questionnaire was the Student Nomination Form from the 'Alpha Mentor Project' and the 'Quest Student Nomination Questionnaire' from Renzulli et al. (1981).

A part of the items of the two questionnaires were selected and translated and we constructed some supplementary items ourselves.

1.3.10 Parent Nomination Form

A questionnaire for the parents, based on the questionnaire 'Things My Child Likes to Do' (constructed by Delisle; in Renzulli et al., 1981) was constructed. The items of this questionnaire are especially related to motivation, effort, and involvement on the one hand, and to originality, flexibility, and creativity on the other hand. Furthermore, specific questions about reading behavior were asked and inquiries were made about some developmental milestones (e.g. learning to talk, walk, and read).

In table 1, the variables measured and the information sources used are summarized. In this schema most 'cells' are filled. For some combinations of variables and information sources only very few data have been gathered.

Table 1: Information sources and measured variables

INFORMATION SOURCES	VARIABLES IMPORTANT FOR GIFTEDNESS		
	ABOVE AVERAGE INTELLECTUAL	CREATIVITY	TASK COMMITMENT
STUDENT PSYCHOMETRIC	- IST-70 - RAVEN SPM - Test for General Knowledge	- Creativity Questionnaire	- FES
SELF-EVALUATION	- Self-Nomination Form	- Self-Nomination Form	(very few data)
CLASSMATES	- Peer Nomination Form	- Peer Nomination Form	(very few data)
TEACHERS	- SRBCSS-Learning Characteristics - Supplementary Questionnaire	- SRBCSS-Creativity - Supplementary Questionnaire	- SRBCSS-Motivation
PARENTS	(very few data)	- Parent Nomination Form	- Parent Nomination Form

1.4 Action-Information-Messages

During the screening phase, our main concern was to get a broad survey of the total group of students, with an emphasis on general, objective, and quantitative 'status-information' related to relatively stable characteristics. For individualized educational programs to be adequate and efficient it is necessary to gather some extra information about special interests, skills, and motivation. It is necessary to continuously watch for the signals from students who are at a certain moment and in a certain situation highly interested in a certain subject and willing to explore it further, to work on it, and to spend some time on it. RENZULLI et al. (1981) proposed the use of *Action Information Messages* (AIM) in the *Revolving Door Identification-Model* (RDIM). An AIM is a form which enables a teacher to make a short note about a signal of such a high level of interest and motivation shown by a student.

This AIM can serve as a starting-point for a consultation with this student about the way (s)he can explore this interest and to plan activities in which (s)he is directed at some product. In spite of the fact that we have no RDIM-like model implemented in our schools in Holland, we asked all teachers of our subjects to use these forms. The reasons for this are that we wanted to find out whether they would be able to use them, and whether the students in our imaginative 'talent pools' (one talent pool in every class) would receive more or qualitatively different AIM's than the other subjects. The teachers did not know which students were members of this talent pool.

1.5 The Triadic Model as a Starting-Point for the Description of the Social-Emotional Situation of Gifted Students

With the data gathered for the screening, we cannot only answer the first main question (How can gifted children be identified? What is the relation between the measured variables?), but we can also create different groups of students on the basis of certain (combinations of) variables, depending on the definition (of giftedness) chosen. Using this discernment of groups, it is possible to investigate the second main question of our research project: What is the social-emotional situation in which gifted students in the 7th to 9th grade in the Dutch educational system live?

As a starting-point for the selection of variables and instruments in our research project we used the extension of RENZULLI's three-ring conception of giftedness by MÖNKS, 1985 (MÖNKS & VAN BOXTEL, 1985). The underlying thesis of this model is that the social environment is a neglected part in RENZULLI's model and that personality variables are partly dependent on and determined by their dynamic interaction with the social settings: family, school, and peers (figure 3).

In addition, the development of gifted students does not take place in social isolation: experiences and socialization processes in these settings can be of crucial importance for the development of relevant individual characteristics of giftedness. It is important to note that each of the three social factors (school, family, and peers) can have its (positive or negative) influence on each

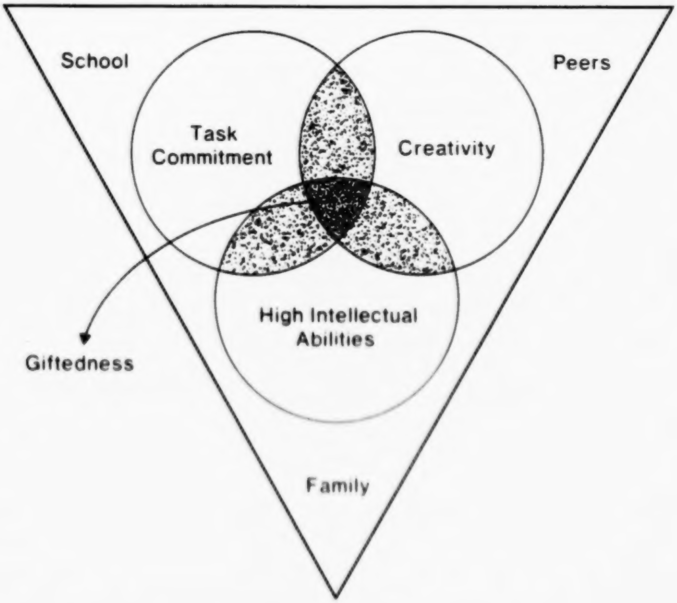


Figure 3: Extension of RENZULLI's triadic model of giftedness by MÖNKS

of the three clusters of characteristics. The proximity of angles and circles is not meant to indicate a stronger or weaker relationship between social factors and (the development of) certain characteristics of giftedness.

1.6 Variables and Instruments for the Description of the Social-Emotional Situation of Gifted Students

On the basis of this line of thought, a number of topics were thought to be relevant: 1) self-concept and 'locus of control', 2) sociometric peer status, 3) evaluation of the school situation, 4) learning styles, 5) achievement motivation. We will deal with each of these subjects in a condensed way.

1.6.1 Self-concept and Locus of Control

SHAVELSON & BOLUS (1982) have presented a hierarchical model of the self-concept and some data which support this conception. They define the self-concept as the way in which someone perceives self:

> "These perceptions are formed through one's experience with and interpretation of one's environment and are influenced especially by reinforcements, evaluations by significant others, and one's attributions for one's own behavior... It is hierarchical, with perceptions of behavior at the base moving to inferences about self in sub-areas (e.g. academic – English, history), then to inferences about self in academic and nonacademic areas, and then to inferences about self in general" (Shavelson & Bolus, 1982, p. 3).

The lower in the hierarchy, the more situation-specific and the less stable the self-concept becomes. With this model in mind we selected the following instruments:

(1) General self-concepts and locus of control

As a measure of the general self-concept (the top of the hierarchy), we have used the Rosenberg Self Esteem Scale (Rosenberg, 1972). This scale is recommended by Wylie (1974) because of the relatively few items (10) and its good psychometric qualities.

We suppose that there is some connection between the general self-concept and Rotter's (1975) concept of 'locus of control'. This construct is related to the way in which people interpret the causes of events in their lives and to the degree in which people think they can (internal locus of control) or cannot (external locus of control) change or influence these events. In an educational setting, this construct can be linked to feelings of helplessness or alienation (van der Linden & Roeders, 1983). At the Hoogveld-Institute in Nijmegen, the questionnaire on locus of control by Nowicki & Strickland (1973) was translated and revised (van der Linden & Roeders, 1983) to test this hypothesis. This instrument was also used in our research.

(2) Academic self-concept

Frequently a distinction is made in research on self-concepts of gifted students between the academic and nonacademic self-concepts (mostly conceptualized as the social self-concept; e.g. Ross & Parker, 1980). This same distinction was made by Shavelson & Bolus (1982). As a measure of the academic self-concept (the image of ones own giftedness, which is restricted to capacities, activities, and achievements at school), we have selected the items with the highest item-total correlations from two German measures of the academic self-concept 'Selbstbild der Begabung' (Meyer & Fend, used by Helmke & Dreher, 1979); 'Negative Einschätzung der eigenen Leistungsfähigkeit' (Jakobs & Strittmatter, 1979). The subscale ZP of the school questionnaire SVL (Smits & Vorst, 1982) was used as a measure of test anxiety.

(3) Social self-concept

As a measure for the social self-concept we have chosen two subscales of the SVL: SA (measuring the perceived social acceptance) and SV (measuring the self percieved social competence).

1.6.2 Sociometric Peer Status

A distinction can be made within the research on social status between 'peer assessment' (an objective description and judgement of characteristics, behaviors, and achievements of others) and 'sociometry' (this is a more subjective report on ones own feelings about others; e.g. attraction, aversion, and neutrality; cf. KANE & LAWLER, 1978). We used both methods in a questionnaire we constructed ourselves. We asked both for a nomination of 'like most' and 'like least' students and a nomination of students based on some behavioral characteristics (positive and negative) which were thought to be related to sociometric status groups. For this last part we used some items from COIE, DODGE & COPPOTELLI (1982).

1.6.3 Evaluation of the Own School Situation

A questionnaire on the evaluation of the own school situation, constructed by STOEL (1980), consists of the following evaluation subscales: the school in general, the own cognitive functioning, contacts with classmates, relationship with the teacher as a person, relationship with the teacher as a didactician, school organization and buildings, and the subject matter offered. We were not so sure that these a priori subscales would be replicated by factor-analysis, because VAN DER LINDEN & ROEDERS (1983) only found one general factor of 57 items (evaluation of the school in general) and a smaller factor (10 items) which could be interpreted as contacts with classmates. We found the same result in our research. The latter subscale can be considered to be an important indirect index of the sociometric status and (indirectly) of the social self-concept.

1.6.4 Learning Styles

In our approach to learning styles, we were not primarily interested in a trait-like concept, cognitive styles or strategies. We think that every student possesses a set of study-skills, as a result of study experiences in the past. In a certain situation they can select one of these skills for a particular task. We used the following sources: The LSI from DUNN, DUNN, & PRICE (1985), the Survey of Study Habits and Attitudes from BROWN & HOLTZMAN (1966), the school questionnaire SSV from SMITS (1976), the Lancaster Inventory of Approaches to Learning from Entwistle, Hanley & Hounsel (1979) and the learning styles questionnaire of Moritz (1984a,b).

In our questionnaire, the following topics were included: planning and organization of homework, physical aspects of the study environment, habits in learning written material, habits in tests, ability to concentrate during the lessons and during homework completion, time spent on homework, difficulties in learning written material, evaluation of one's own study habits, preference for internal differentiation measures, preference for studying alone or together, hobbies at the cost of studying, emotional problems at the cost of homework, what is learned and remembered from lessons, test results in comparison to expectations, changing of study habits, and how often the students had thought about the topics of the questions asked.

As a supplement to the above-mentioned questionnaire, we have chosen the Learning Styles Inventory (LSI) of Renzulli & Smith (1978) in which the preferences for nine different instructional methods can be assessed with Likert-items. The methods are: lecture, drill and recitation, programmed instruction, independent study, peer teaching, discussion, project, teaching games, and simulation.

1.6.5 Achievement Motivation

As with learning styles, achievement motivation has also become a kind of mini-research project within the whole project. In our view, both the FES (Lehwald; in Guthke & Witzlack, 1981) and the motivational subscale of the SRBCSS (Renzulli et al., 1971) show an excessive trait-like approach, whereas we preferred an achievement model in which situation and task specific variables play a more important role.

In the center of this mini-research, we used the concept 'school motivation'. As a measure for this concept, we used two subscales of the SVL (Smits & Vorst, 1982); LG (learning task commitment) and HA (homework attitude), which measure the willingness of the student to exert herself for school tasks and for homework.

Around and as a supplement to the concept of school motivation we constructed a questionnaire in which the following topics were included:

(1) *Evaluation of the social environment:* do students think that teachers, parents and classmates are really interested in their academic achievements, do they think that this interest has any influence on their exertions, how content are they with their achievements, do they think that this interest has any influence on their exertions, how content are they with their achievements, and how do they react when they get better or worse grade reports than they are used to getting? With a translation of the questionnaire 'Leistungs- und Konformitätssanktionierung' (Helmke & Dreher,

1979) we wanted to obtain insight in the evaluation by individual students of their 'class-climate' in terms of the way classmates react to academic achievements and the degree to which these are valued by them (or not).

(2) *Extrinsic or intrinsic motivation for academic achievements.*

(3) *Attribution style:* what do students think are the main causes of academic success or failure.

(4) *Affects after feedback about academic achievements.*

(5) *Other items:* need for structure, need for an external standard of excellence, and need for a certain (higher or lower) level of difficulty.

(6) Because *fear of failure* also seems to be an important factor within the field of research on school motivation and academic achievements (HERMANS, 1971), we also measured this construct in our research, with the aforementioned subscale ZP (a test anxiety scale) of the SVL of SMITS & VORST (1982).

1.6.6 Interview

Using the instruments described above, we hoped to assess a number of important variables with respect to the social and emotional development and social functioning of the students. With these instruments, the emphasis was on quantitative data. The researchers felt a strong need for supplementary qualitative data. For this reason we decided to construct a semi-structured interview. It was impossible to interview every student. Therefore, we made a selection of four groups with 30 students in each group. The criteria for this selection are described in 2.1 of this article.

In the construction of this interview we made use of the extensive experience of the Hoogveld-Institute in Nijmegen with in-depth interviews with adolescents (VAN DER LINDEN & ROEDERS, 1983). From BAACKE (1979) we used the concept 'Lebenswelt' (literally translated: life world). For the interviews this means that we asked questions about experiences from the past to the present. We tried to get a fairly complete picture of the social emotional life situation of the adolescents at the moment, by asking about several relevant social factors and settings (school, family and peer group; the corners of the triadic model, cf. figure 3).

In this interview, which was first used in a pilot-study, the following topics or series of questions are presented:

1) Introduction (general information and instruction)
2) Personal data
3) Kindergarten (4–6 years)
4) Elementary school (6–12 years)
5) Secondary school (12–15 years)
6) Relationships with teachers
7) Contacts with classmates
8) Friendship relations

9) Relationship with parents
10) Expectations for the future
11) Evaluation of the interview by the respondent
12) Evaluation of the interview by the interviewer (after the interview; a written report)

After the interview the students fill in a personality questionnaire (NPV-J; LUTEIJN, VAN DIJK, in VAN DER PLOEG, 1981).

2. Some Preliminary Results

In this research project, 11 schools and 36 classes (a total of 905 students) were involved, equally divided among the first three classes of secondary school (7th to 9th grade). We took care to represent different school types (ranging from low level to high level and comprehensive schools). Unfortunately, the one comprehensive school in the research project, which cooperated only after a great deal of persuasion, withdrew after some months. Because this school was represented with two classes per grade level this caused a drop out of 133 subjects. In the rest of our project we worked with 10 schools and 772 students.

At this moment, the analyses and interpretations of the data are not yet finished, but with the results of the preliminary analyses the reader will get an idea about the way in which we want to use, analyze and interpret the abundance of data we have gathered in our research project. These results will be presented in relation to the two main research questions.

2.1 Identification and Differentiation

2.1.1 Selection of Research Groups

The first main research question concerns the way in which gifted students can be identified and the relations between the measured variables. We cannot go into detail here with respect to the primary analyses (on reliability and structure of instruments) or the validity of the instruments. With a lot of instruments, variables, data gathering techniques and information sources there are, basically, very defensible identification procedures. In this case, multi-trait-multi-method analyses (CAMPBELL & FISKE, 1959) can provide only a first selection of the best instruments (with convergent and discriminant validity as criteria), but not of the best identification procedure. RENZULLI's (1978) three-ring conception of giftedness can supply a further restriction of the set of relevant instruments and variables.

We also based our identification procedure on the research literature for this article. We think that a great deal of conflicting results in the research literature on gifted students can be explained by differences in definition and measurement. Some of these differences relate to the aforementioned absolute or relative approach, the criteria which are thought to be relevant for giftedness (e.g. intelligence or also creativity and task commitment), and the inclusion or exclusion of underachievers in the research sample. A further problem can be that the interpretation of results in research on gifted students can sometimes be very difficult without a control group of average students.

Motivation or 'task commitment' (one of the three components of RENZULLI's three-ring model of giftedness) was not used as one of the selection criteria because we were mainly interested in this concept as a discriminating variable between the selected groups (e.g. between achievers and underachievers).

Following this line of reasoning, we decided to select four research groups, based on the relative approach (selection per class):

I. Many-sided gifted students: Students with above average intelligence, creativity and academic achievement: belonging to the top 25% of their class on the intelligence test (IST) and creativity questionnaire and with a grade point average in accordance with their intelligence (as determined by the regression equation between intelligence and grade point average).

II. One-sided academically gifted students: Students with above average intelligence and academic achievement, but below average creativity: belonging to the top 25% of their class on the IST and with a grade point average in accordance with their intelligence, but below average on the creativity questionnaire.

III. Gifted underachievers: Students with above average intelligence but achieving less (academically) than would be expected based on their intelligence, without any restriction on creativity: belonging to the top 25% of their class on the IST, but with grade point averages significantly (at the 5% level) below their expected grade point average.

IV. Control group: Average scores on intelligence, creativity and academic achievement: belonging to the middle 40% of the class on the IST and creativity and with a grade point average in accordance with their intelligence.

In table 2 the results of this selection are presented.

Table 2: Mean scores of the research groups on the selection criteria

group	intelligence (1)	creativity (1)	under- or over achievement (2)	girls	boys	total
I	120.8	121.0	6.47	7	15	22
II	119.3	89.3	6.89	21	24	45
III	120.8	104.7	-20.66	12	15	27
IV	100.1	100.1	7.19	39	35	74
			total	79	89	168

It is evident from this table that the first three groups are highly intelligent in relation to group IV and that group III and IV are average in creativity. The large negative difference score indicating the underachievement of group III is very clear. The positive scores for the groups I, II and IV seem to indicate that these groups consist mainly of slightly overachieving students, but this is a result of the standardization of the scores on intelligence and grade point average and the fact that there are no underachievers left in these groups.

The relatively small number of cases (relative to the 772 cases of the whole sample) can be explained partly by the fact that we could not get grade point averages of three school classes and partly by the correlations between the selection variables (intelligence - grade point average: r = 0.38, intelligence - creativity: r = 0.08, grade point average-creativity: r = 0.03). The relatively low correlation between grade point average and intelligence can be considered as an underestimation of the real correlation between intelligence and academic achievement. This underestimation is caused by the restriction of range phenomenon due to the standardization of the intelligence scores and grade point averages per class.

2.1.2 Identification of Achievers and Underachievers by Teachers

As an illustration of the possible role of teachers in the identification process, it would be interesting to investigate whether they do know that the intelligent underachievers are underachievers and not merely average students. For this purpose, we asked the teachers to assess the possible and actual academic achievement level of every student on a 7-point scale. The students who were assessed to have a higher potential than actual level were considered to be identified by the teachers as underachievers and the other students as achievers. These groups were compared with the combined groups I and II (the achievers) and group III (the underachievers):

Table 3: Classification results of intelligent students as underachievers or achievers as identified by teachers

group	N	N of underachievers correctly classified	% of underachievers correctly classified
intelligent achievers (I + II)	56	45	80.4
intelligent underachievers (III)	25	17	68.0
total	81	62	76.5

This classification result (which is highly significant: $\chi^2 = 15.8$, $p < 0.0001$) illustrates that teachers seem to be relatively good in identifying underachievers. The mean difference between scores of the assessed possible and actual level of the achievers (I + II) and underachievers was also highly significant ($t = 3.51$, $p < 0.001$, one-tailed).

2.1.3 Educational Differentiation: Preference for Instructional Techniques

Because we were also interested in possibilities for educational differentiation for the gifted students, we used the Learning Styles Inventory from Renzulli & Smith (1978), a measure of student preferences for instructional techniques. The mean subscale scores of the four groups for these instructional techniques are given in table 4.

Table 4: Mean scores on the subscales of the LSI for the four research groups

ORDER OF PREFERENCE	GROUP I		GROUP II		GROUP III		GROUP IV	
	scale	mean	scale	mean	scale	mean	scale	mean
1	DIS	34.18	DIS	31.62	DIS	30.45	DIS	31.93
2	IND	34.18	TEA	30.57	TEA	28.35	TEA	31.57
3	PRJ	32.12	PEE	29.59	PRO	28.30	PEE	30.97
4	PRO	31.65	PRO	28.86	PEE	26.10	PRO	30.58
5	PEE	30.71	PRJ	27.86	IND	25.70	SIM	30.13
6	LEC	30.00	LEC	26.88	SIM	25.05	PRJ	29.37
7	SIM	29.82	SIM	26.86	PRJ	24.85	IND	27.80
8	TEA	28.94	IND	26.83	LEC	24.60	LEC	27.60
9	DRI	26.82	DRI	23.95	DRI	22.15	DRI	25.12
mean total		30.94		28.11		26.17		29.45

The four groups seem to be unanimous in their high preference for discussion and their dislike of drill and recitation. Independent study projects, which are important parts in the type-III activities of Renzulli et al. (1981) RDIM [1] are highly preferred by the many-sided gifted students (I), whereas teaching games are not preferred by this group. Another interesting finding is the general positive attitude of group I (mean total score = 30.94). This mean total score for group I is significantly higher than the mean total score for group II ($t = 2.39$, $p < 0.02$, two-tailed) and group III ($t = 2.13$, $p < 0.04$, two-tailed).

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[1] Working on a specific and self-selected area of study with the use of multiple and advanced resources and directed at the realization of a high quality product.

2.2 Preliminary Results of the Social-Emotional Situation of Gifted Students

In part I, the instruments on the second main question of the research project were described. From this survey, it must be clear that it is again necessary to make a strict selection for the presentation of some results related to this question.

For this purpose, we selected the following variables: general self-concept, locus of control, academic self-concept, test anxiety, social self-concept, sociometric peer status and peer assessment, evaluation of the school in general, school motivation, and task commitment.

2.2.1 Self-concept and Locus of Control

In table 5 the results of the oneway analysis of variance between the research groups on the self-concept and locus of control (sub)scales are presented.

Table 5: Results for the oneway analysis of variance between groups on self-concept and locus of control

VARIABLES	mean scores of the groups				F Ratio	F Prob.
	I	II	III	IV		
general self-concept	33.27	32.67	32.08	31.93	0.508	0.6775
locus of control	35.23	35.13	33.85	35.70	2.384	0.0713
academic self-concept	42.06	40.93	32.47	36.93	13.803	0.0000
text anxiety *	40.14	39.29	34.96	36.91	3.567	0.0155
social self-concept	43.88	40.90	38.47	38.54	4.377	0.0057

* A low score indicates high test anxiety.

From this table it is clear that it is important to discern and investigate the different aspects of self-concept. No significant differences were found in general self-concept. It is not clear how this result can be explained in light of the research literature. DOWDALL & COLANGELO (1982) reviewed research in which gifted students were found to have a higher general self-concept than nongifted students, whereas COMBS (1964) and DOWDALL & COLANGELO (1982) found a higher general self-concept by gifted achievers than by gifted underachievers.

Locus of control can be considered to be an aspect of the general self-concept. Gifted underachievers have a higher external locus of control score than gifted achievers (I + II) ($t = 1.75$, $p < 0.04$, one-tailed). This result was also found by KANOY et al. (1980). From these results it is not clear how this should be interpreted: Is high external locus of control (with a lack of confidence in the results of one's own exertions; e.g. for academic achievement) a cause of weak motivation and a low grade point average or are low report grades a cause of a high external locus of control? Only very detailed and longitudinal research can shed more light on this question. In some research (e.g. Findley & Cooper, 1983) a relationship was found between intelligence and locus of control. In this research, the correlation between the standardized (per class) intelligence (IST) scores and locus of control scores was only 0.02 ($N = 715$), and the intelligent achievers (I + II) did not have a higher internal locus of control than the achievers with an average intelligence score.

Unlike Winne, Woodlands & Wong (1982), we found that gifted achievers (I + II) did not have a higher academic self-concept than average achievers. The low academic self-concept of the underachievers in relation to the gifted achievers can be considered as a confirmation of the results found by Kanoy et al. (1980). The academic self-concept of the underachievers is even lower than of the average achievers ($t = 3.03$, $p < 0.003$, two-tailed).

Underachievers have higher test anxiety than the intelligent achievers. This result can be regarded as another indication for the negative academic self-concept of the underachievers.

The social self-concept of the gifted underachievers and average achievers is lower than for the intelligent achievers (a replication of the research by Bledsoe & Garrison (Whitmore, 1980, p. 176), whereas the many-sided gifted students feel more socially accepted than the one-sided intelligent achievers ($t = 2.35$, p 0.022, two-tailed). It can be concluded from this that there is no reason to think that gifted achievers feel socially isolated in a group of average age-mates. It must be emphasized here that the mean scores for the underachievers and average achievers on the social self-concept scale are not below average when related to the age norms for this scale.

In summary, it can be concluded that there are no differences between the groups on the general self-concept, that the intelligent achievers (especially the many-sided gifted students) have a positive academic and social self-concept, and the intelligent underachievers have a high external locus of control and a negative academic self-concept.

2.2.2 Sociometric Peer Status

Gallagher (1964) found that gifted students are more popular than their non-gifted classmates and Roff, Sels & Golden (1972) found that the most popular children in a school class are more intelligent than the less popular children.

In table 6 the results of the oneway analyses of variance between groups on the peer assessment items are presented.

Only the group differences on the positive peer assessment item 'helps' and the negative peer assessment item 'seeks help' are significant. Underachievers are assessed by their classmates as helping their classmates less than the students in the other three groups. They also seem to seek help from their classmates more than the students in the other groups. In addition, in six separate t-

Table 6: Results for the oneway analysis of variance between groups on sociometric and peer assessment items

VARIABLES	Z - SCORES OF GROUPS				F Ratio	F Prob.
	I	II	III	IV		
like most	0.05	0.15	0.24	0.18	0.134	0.9397
like least	0.10	0.28	-0.10	-0.02	1.157	0.3284
POSITIVE						
cooperates	0.24	0.35	-0.03	0.17	0.721	0.5409
humour	0.16	0.08	0.16	-0.05	0.506	0.6786
helps	0.43	0.30	-0.42	0.33	3.642	0.0143
leads	0.47	-0.17	0.23	0.16	1.578	0.1973
affiliates	-0.16	0.04	-0.10	0.12	0.536	0.6586
NEGATIVE						
brags	0.27	-0.16	-0.02	0.03	0.695	0.5567
fights	0.07	-0.12	0.20	0.03	0.497	0.6848
disrupts	-0.11	-0.11	0.27	-0.07	0.990	0.3995
snobbish	0.31	-0.04	-0.16	0.13	1.145	0.3332
seeks help	-0.51	-0.58	0.27	-0.22	5.373	0.0016

tests for group means (for both items group III was compared with the other three groups), these differences were significant ($p < 0.05$, two-tailed). No other significant differences on any item were found in group means between any pair of groups (t-tests, $p < 0.05$, two-tailed).

It can be concluded from these results that gifted students do not seem to differ in popularity from their nongifted classmates.

2.2.3 Evaluation of the Personal School Situation

In table 7, the results of the oneway analyses of variance between groups on the general attitude to the teachers and the school are presented.

Table 7: Results for the oneway analysis of variance between groups on evaluation of the personal school situation

mean scores of the groups				F Ratio	F Prob.
I	II	III	IV		
135.59	130.38	121.19	130.61	3.015	0.0317

From this table it is clear that the underachievers have a very negative attitude to school in general whereas the gifted achievers have the most positive attitude. This was also found by Khatena (1982), Whitmore (1980) and Bönsch (1977), who reported negative attitudes of gifted underachievers toward the teachers as humans (unsympathetic, insensitive to the needs and interests of students, rigid, and content with average academic achievement), the teachers as didacticians (rigidly clinging to the educational program) and to the educational program in general (not interesting or challenging for gifted students). These three aspects were also measured with the questionnaire on the evaluation of the personal school situation. It is a little surprising that the many-sided gifted achievers have the most positive attitudes to a school situation and educational program which are in fact more adequate for average students. Maybe this positive attitude can be partly explained by their high school motivation and their creative capacities to make the best of a (school) situation which is not ideal for them.

2.2.4 (School) Motivation

From the research literature (O'Shea, 1970; Terman & Oden, 1959) it could be expected that the underachievers would have lower scores on school motivation than the three other research groups. This difference is clearly demonstrated in table 8.

Table 8: Results from the oneway analyses of variance between groups on school motivation and task commitment

VARIABLES	mean scores of the groups				F Ratio	F Prob.
	I	II	III	IV		
school motivation	78.19	76.82	68.00	76.93	3.662	0.0138
task commitment	27.45	20.18	20.52	20.80	9.406	0.0000

From these results it cannot be concluded (like Bish, Hildreth & Zillidid; cf. Whitmore, 1980, p. 173–174, 189) that low school motivation is a primary cause of low academic achievement. As has been said before, it was considered important to use and measure the concept of task and situation specific school motivation instead of a trait-like concept of achievement motivation. From this point of view, it is possible that low school motivation is a consequence of the influence of certain social environmental variables (family, school and peers) and is itself only a mediating variable between these social variables on the one hand and academic achievement on the other hand.

As has been said before, the FES (Fragebogen zur Erfassung des Erkenntnisstrebens) was considered to be a measure of the concept 'task commitment'. It also seems to be a measure of creativity and intelligence (because from our data group I has a higher score than group II, III, and IV). The correlation coefficients between the FES-scores on the one hand and school motivation, creativity and intelligence on the other hand are 0.34, 0.46 and 0.12, respectively. Of course, it is still not clear from these data whether this is the type of task commitment which is important for Type-III-like activities of the Revolving Door Identification Model (RDIM) of RENZULLI et al. (1981). On this measure, the underachievers do not seem to have less task commitment than the one-sided gifted achievers or the average achievers. This can be regarded as an illustration of the need for a conceptual differentiation between general achievement motivation, school motivation and task commitment.

2.2.5 Achievement Climate

As has been said before, we are convinced of the great importance of the role of the social environment and the social settings (family, school and peers) in which giftedness develops and gifted students live. As as illustration of the possible importance of the 'achievement climate' within a certain school, grade level or school class, we present the results of three two-way analyses of variance with school and grade level as independent variables and the general evaluation of the school, the perceived classroom 'achievement climate' (measured with the aforementioned scale 'Leistungs- und Konformitätssanktionierung; HELMKE & DREHER, 1979) and school motivation as dependent variables (table 9).

Table 9: F ratios for two-way analyses of variance between the research groups with main effects and interaction effects for school and grade level

VARIABLES	MAIN EFFECTS		INTERACTION EFFECTS
	school	grade level	school * grade level
evaluation of the own school situation	7.165**	73.730**	3.063**
perceived classroom achievement climate	6.015**	4.130++	2.652**
school motivation	4.287**	28.843**	2.366*

From this table, it can be concluded that there are large differences between schools, grade levels, and school classes (the interaction term) on these variables. In some schools and school classes there is a very negative general attitude toward the school and teachers (evaluation of the personal school situation) or a negative attitude to classmates who get high grades (indicated by a low score on the perceived classroom achievement climate). There are also large differences in school motivation.

Table 9 also shows significant grade level effects on these variables. In table 10 the mean scores on these variables are given for each grade level.

Table 10: Mean scores for grades on general evaluation of the school, the perceived classroom achievement climate, and school motivation

GRADE LEVEL	MEAN SCORE ON SCALE		
	general evaluation of the school	perceived classroom achievement climate	school motivation
7	137.62	19.28	80.54
8	123.24	18.18	74.94
9	122.60	18.47	72.77

From this table it can be concluded that there is a marked decrease in the general attitude and high school motivation after their promotion from the elementary school, probably as a result of their high expectations on the 'new school'. After the 7th grade there is a sharp decrease in the mean scores on these variables. This grade level effect and the differences between schools and school classes lend some support to the supposed importance of this aspect of the social environment. It also gives a hint about a research direction which could be very interesting: the possible role of the achievement climate within a certain school, grade level or school class in the development of (underachievement of) gifted students. Unfortunately, it is impossible to go into further detail here with respect to the way in which this could influence, or with respect to the analytic design which could shed some more light on this question.

We hope that the results from these preliminary analyses have provided the reader with an idea about the abundance of possibilities which we have in our project, the ways in which gifted students can be identified, and how we can get an insight into their (social-emotional) situation. For a more detailed description of the theoretical background of the research, the way it was carried out, primary analyses of the instruments and more sophisticated analyses and interpretations of the differences between the research groups and the possible role of the social environment, we refer the reader to the final report of the research project (van Boxtel et al., 1986).

Summary

This article gives a survey and some preliminary results of a Dutch research project on the identification of gifted children in secondary education and a description of their situation. In this project, 772 7th to 9th grade (age 12–15) students participated. Renzulli's *three-ring conception of giftedness (above average general ability, creativity, and task commitment) was taken as a starting-point for the identification procedure.* Mönks' *extension of this model with the social environment (family, school and peers) was the main basis for the selection of variables for the description of the social-emotional situation in which gifted students live.*

The first and main part of this article deals with a survey of the research project and the instruments which were used in it. In the second part, some preliminary results of the research on four selected groups are described. These groups are: many-sided gifted (intelligent, academically achieving and non-creative), intelligent underachieving (intelligent and academically underachieving, without restrictions on creativity) and average (in intelligence, creativity and academic achievement) students. For the selection, the 'relative approach' (selection per school class) was used.

The most important results which are reported here are: Teachers seem to be quite effective as identifiers of gifted underachievers, many-sided gifted students prefer independent study and projects and have a positive social self-concept, there are no differences between the groups on general self-concept or sociometric peer status, underachievers have a negative academic self-concept, a negative attitude toward school and low school motivation and there are large differences between schools, grade levels and school classes on the students' general attitude toward the school, the classroom 'achievement climate' and school motivation. The latter differences were considered to be important explanatory variables for the development of gifted behavior as well as for the emergence of underachievement.

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CHAPTER IV

Identification, Development and Analysis of Talented and Gifted Children in West Germany

Kurt A. Heller & Ernst A. Hany

Introduction

The topic of giftedness is growing in interest in the Federal Republic of Germany. This is somewhat amazing, since in the last 20 years, the problems of the handicapped and of underprivileged groups have had the public's attention and been the focus of scientific research. Only in recent times has the challenge which the gifted present society been recognized.

Systematic study of problems of the gifted and social problems connected with giftedness has really just begun. This is due to the following conditions: 1) the fear of elitism and diverse prejudices, such as the idea that gifted children and adolescents develop optimally without outside help and will be successful in life whatever they do; 2) the (mistaken) assumption that fostering of the gifted must come at the expense of the handicapped and is thus not consistent with our modern conception of democracy; 3) the rapidly growing number of activities - organized and unorganized - claiming to foster gifted children and adolescents - often without a scientific basis, that is, without enough research evidence about what the activity is supposed to bring about and what educational-psychological effect it is supposed to have.

It would be disastrous in this situation for the major disciplines concerned (pedagogy, psychology, sociology and medicine) not to be involved in research and development related to giftedness. In our opinion, an individually appropriate and society-demanded action is not possible or at least not defensible without scientifically proven results about the phenomena and the structure of giftedness. Therefore, empirical studies on giftedness are no less important than in any other pedagogic-psychological area. This is the background and intention of the research project described here, which is financed by the Federal Ministry for Education and Science (Bundesministerium für Bildung und Wissenschaft - BMBW - Funding number B 3570.00 B).

1. Preparatory Work and Goal of the Munich Study of Giftedness

Many studies attempting to locate the so called 'talent reserves' were done during the sixties (Hitpass, 1963; Aurin, 1966; Heller, 1970a/b, 1972). These early studies, whose goal was to uncover hidden talents, were not only an important impetus toward educational reforms, but also several important methodological innovations came about, especially with regard to the problem of identification. The use of cluster analysis techniques was particularly useful in the multi-factor classification of various school groups with respect to several types of giftedness (Heller, 1970; Allinger & Heller, 1975). This idea was later developed further by Rosemann (1978) and Rosemann & Allhoff (1982) in the so-called typology-predictive model.

As is further discussed below, our study of giftedness is also based on a multi-dimensional giftedness concept, which makes a multi-factor classification model necessary. In contrast to this, most identification attempts still make use of the same outdated cut-off scores, where the definition of giftedness is based on being above a particular IQ-score or a certain percentage is the criterion. This procedure contradicts newer theories of giftedness, and it is our opinion that there is not *one* giftedness but various forms of giftedness.

The *Munich longitudinal study* (4–6 years), planned in 1984 and begun in early 1985 has three main goals:

1) the construction and trial of diagnostic instruments for the reliable and valid identification of gifted children and adolescents (age 4 to 14);
2) the analysis of achievement behaviors of gifted students under various conditions (variations of situations and demands);
3) the longitudinal analysis of individual developmental processes of gifted children and adolescents including positive and negative socialization influences, critical life events, etc.

A great number of other questions associated with this are to be approached in connection with theoretical and methodological considerations. The methodological problems of identification are, of course, not independent of the definition question. What should be understood under the term 'giftedness'? Since this question was discussed in great detail in the preceding chapters, we will limit ourselves to a few comments about our theoretical concept of giftedness which have special meaning here. Those models will be described in more detail which make up the theoretical framework of the empirical study.

2. Conceptual and Theoretical Perspectives

If one considers 'giftedness' to be the product of interaction between genetic and environmental factors, then – assuming (not without just cause) differential influences on both sides – different types of giftedness are to be expected. Gardner (1983), for example, with his multiple intelligence theory, postulates no less than seven types of giftedness. Renzulli's three-ring conception of giftedness (1978, 1981), has been expanded by Mönks & van Boxtel (1985) to six factors with the social settings family, school, and peers (cf. Chapter 3). Personality factors are also seen here as part of the hierarchy. It is questionable, however, whether Renzulli's 'task commitment' should be classified as a *giftedness* factor or rather as a non-cognitive personality trait. As seen in figure 1, a general causal model can be sketched which also includes environmental factors. Conceived as a diagnostic-prognostic model, the predictor is on the left side with the performance behavior as criterion on the right.

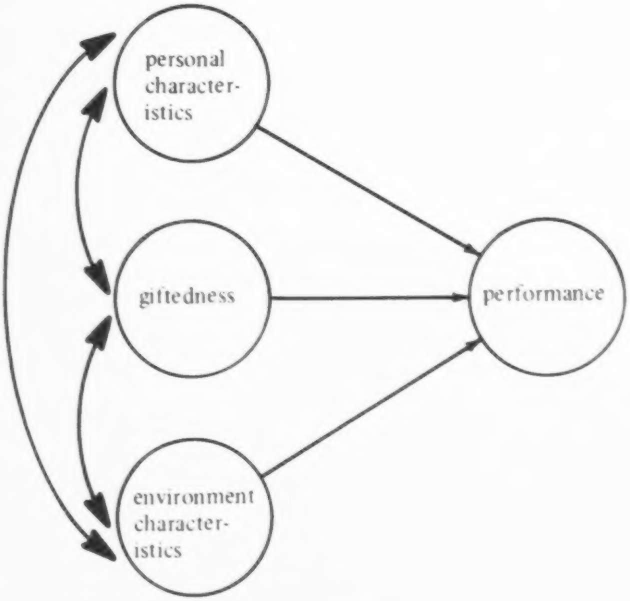


Figure 1: Causal model of performance behavior in the gifted

The following are the more important (non-cognitive) personal traits which influence the relationship between ability and performance in a relatively constant manner: achievement motivation, individual goal setting, and locus of control, all within an expectancy-value-theory of motivation. In addition, interests, self-concept of giftedness, style of learning and of coping with cognitive and emotional demands play a role as well. Environmental factors which influence performance behavior are, for example, the stimulation and achievement pressure of the social learning world; success and failure experiences; or the reaction of parents, teachers, and peers to these experiences, and the emotional atmosphere in the family and classroom. According to our hypothetical model of giftedness, different ability areas can roughly (and tentatively) be assigned to the achievement domains (figure 2).

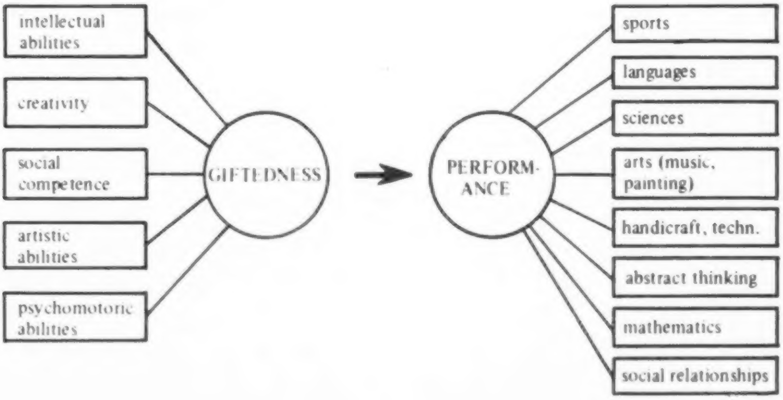


Figure 2: The division of giftedness and achievement with information about talent factors and performance areas

To be sure, a heuristic function is initially attached to this model for its use in the planned screening and in the search for relevant indicators for instrumentalization of the diagnostic testing. Certainly, we expect more differentiated forms of giftedness, that is, a comprehensive system of types of giftedness. Above-average intelligence ('Kernintelligenz' sensu MIERKE, 1963) is considered a necessary but not sufficient condition, i.e that the convergent reasoning complex is achieved. The degree to which each of the factors is distinct (high intelligence, creativity and/or artistic talent, social competence, psychomotor ability, etc.) determines the respective form, the actual pattern of giftedness.

In order to identify gifted underachievers or other socially disadvantaged groups (e.g. gifted children of foreigners), a product-oriented approach or achievement as criterion must at first be dismissed. In contrast to an ex-post-facto definition, the diagnosis-prognosis approach is favored here. The connection to the performance criterion dare not be forgotten. This would be foolish, given that recent cognitive psychology studies based on the expert-novice paradigm have provided much information about problem-solving behavior of the gifted compared with chronological peers of average ability (Weinert & Waldmann, 1985). As Putz-Osterloh (1981), Dörner & Kreuzig (1983), Klix (1983), Davidson & Sternberg (1984) or Sternberg (1985) were able to show so conclusively, the gifted are better than their less able agemates at solving demanding complex problems and their knowledge base was much larger. The methodological consequence for identification of the gifted thus has to consider at least the following points:

(1) Traditional IQ methods are not sufficient for diagnosis of giftedness. At best, the necessary knowledge and convergent thought processes, still recognized as important abilities, can be understood but giftedness is not adequately identified. Intelligence tests need to be supplemented by measurements of divergent thought processes (creative aspect) or even better, by tests which simultaneously measure divergent-convergent problem-solving abilities, such as those from Facaoaru (1985).

(2) The status diagnostic approach to measuring complex cognitive abilities should be supplemented (not replaced!) by process diagnostic methods. Possibilities for the realization of this will be shown at a later point.

(3) Finally, appropriate measurement of the concept 'giftedness' necessitates an instrumentation at different levels, that is consideration of various methods based on the level of abstraction and degree of complexity of the variables being studied. Such multifaceted instruments make a quantitative *and* a qualitative differentiation of giftedness possible. In addition to important primary abilities, relatively complex attributes can also be included in this manner, for example, cognitive style attributes (reflexivity, persistence, self-efficacy beliefs, etc.) or motivational aspects of task coping.

In summary, it should be clear that a multi-dimensional view of giftedness makes differential diagnosis and a classificatory approach to data processing necessary. Beyond this, the expected results of our combined longitudinal/cross-sectional study are in many ways relevant to counseling and teaching practices (cf. Heller, 1985):

(1) A purposeful fostering of giftedness is difficult to imagine without adequate proven diagnostic information. This is even more true for the identification of the gifted individual. Most of the conventional tests are not appropriate because of ceiling effects or other problems (e.g. low validity for giftedness traits). One of the most pressing tasks of our research project is therefore, to put together or develop an appropriate diagnostic instrument for identifying gifted children and adolescents in German-speaking regions. The instrument will be evaluated for validity and reliability in several age and student groups.

(2) The research is not only important for the evaluation and optimization of the identification process, but also because it offers important information about individual development of the gifted and about specific psycho-social problems. This knowledge is vital for appropriate teaching and educational measures, as well as for counseling or psychological interventions where

necessary for the individual case. Beyond this, important results are expected about socialization and prevention.

(3) Logically, typical cases for counseling in our longitudinal study have to be included and the development of counseling concepts in accordance with this has to be examined. Finally, appropriate measures for parent counseling and further qualifications for teachers' and counselors' training should be tried out. This problem complex, however, is momentarily beyond the scope of this project and must be covered by accompanying work. A comprehensive fostering and counseling approach would also have to include medical-psychiatric problem aspects (cf. Chapter 12).

3. Method

The research methods to be used must be based on the questions raised and the goals of the project. Methods include the type of instruments used and the data analysis procedures as well as the decision-making strategies for selecting gifted children.

3.1 Methods of Identifying the Gifted

The methods of classification are primarily dependent on the goal of the classification. That goal determines the content, procedure, and energy to be invested. If one is looking for mathematically capable students for an enrichment course at school, one may be satisfied with the math teacher's recommendation or a short math abilities test. But if one is looking for students qualified for an expensive scholarship to be awarded for several years, then more exact and complete diagnostic measures are called for in order to avoid false decisions.

Unfortunately, the relationship between the goal and the method of identification is often overlooked. Thus, the reason for identification is often left unspecified in recommendations for procedure (e.g. OTEY, 1978; TORRANCE, 1970) and is not considered in evaluation of the identification process (e.g. DIRKS & QUARFOTH, 1981; RENZULLI & SMITH, 1977). One exception to this is found in SHWEDEL & STONEBURNER (1981). ALVINO, MCDONNEL & RICHERT (1981) also complain, on the basis of a nationwide study, that "many tests/instruments are being used for purposes and populations completely antithetical to those for which they are intended and were designed" (p. 128).

The goal of identification in our project is *not* a special educational program but rather solely scientific interest in the target group of gifted and in their individual characteristics and development. This will not lead to any identification recommendations. Furthermore, methodological ideas from practically oriented studies (e.g. Payne & Halpin, 1974; Cohn, Carlson & Jensen, 1985) cannot be implemented.

Therefore, we are dependent on methods from experimental psychology which, however, are only of limited use in the field of education. The main hypotheses of our study - and the experimental planning has to be based on these - are 1) that there are various types of giftedness, and 2) within the empirically determined giftedness patterns, those persons with the highest values are to be considered highly gifted. This means that our instruments should measure several factors of giftedness as independently from one another as possible. And they must necessarily differentiate well in the upper ranges. We meet these requirements by a) employing a two-step identification process and b) using multidimensional measurements in both steps.

This procedure has several advantages: In the first step, a rough selection process (which does not have to be extremely valid) is satisfactory, in order to eliminate a large number of those who are not qualified from the limited number of qualified (gifted) students (Drenth, 1969). The identification methods in the second step can then measure more exactly and avoid the 'bandwidth-fidelity-dilemma' (Cronbach & Gleser [1965]). In the first step, teachers are asked to nominate the best students from their class as compared with all of their chronological peers, i.e. to judge them on the basis of various dimensions of giftedness. These are the same dimensions (intelligence, creativity, social competency, psychomotor abilities and musical abilities) which are considered in the testing that follows for the remaining 20 percent of the original sample (cf. figure 3). Standardized aptitude tests and differentiated questionnaires (for students and teachers) are employed with the goal of further reducing the 20 percent studied to the top 2 or 3 percent. At the same time, the methods are supposed to include enough variance to determine types of giftedness using cluster analysis. Instruments with an average difficulty of .20 to .10 (probability of solving) would be ideal, as well as normally distributed values, since we would like to use the computer program NORMIX (improved by German researchers - Wolfe, 1971; Rosemann & Allhoff, 1982) for the grouping of subjects. This makes the estimation of population parameters possible - assuming that the variables are normally distributed.

Our work on the construction of tests which meet the mentioned requirements is in progress. The goal is the development of a diagnostic instrument which will quickly and simply make possible a) qualitative assignment to a stable type of giftedness and b) the quantitative classification within the relevant giftedness dimensions.

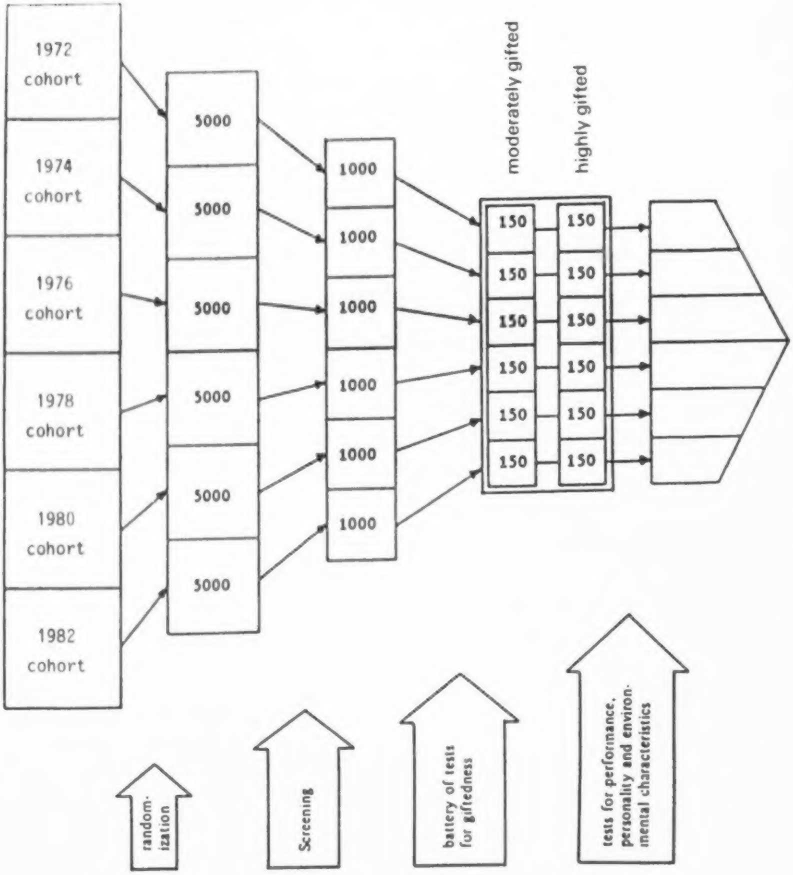


Figure 3: Sequential strategy for the differential identification of highly gifted youth

3.2 Methods of Predicting Extraordinary Achievement

We also use a prognostic approach because every observation of giftedness is aimed at predicting future achievement in standardized situations (such as in classes, programs or careers). We do this in order to a) gain insight into the often unclear relationship between giftedness and achievement (cf. GAGNÉ, 1985), and b) validate our definition of giftedness. The criteria here are scholastic and extracurricular successes and recognition; the prediction of

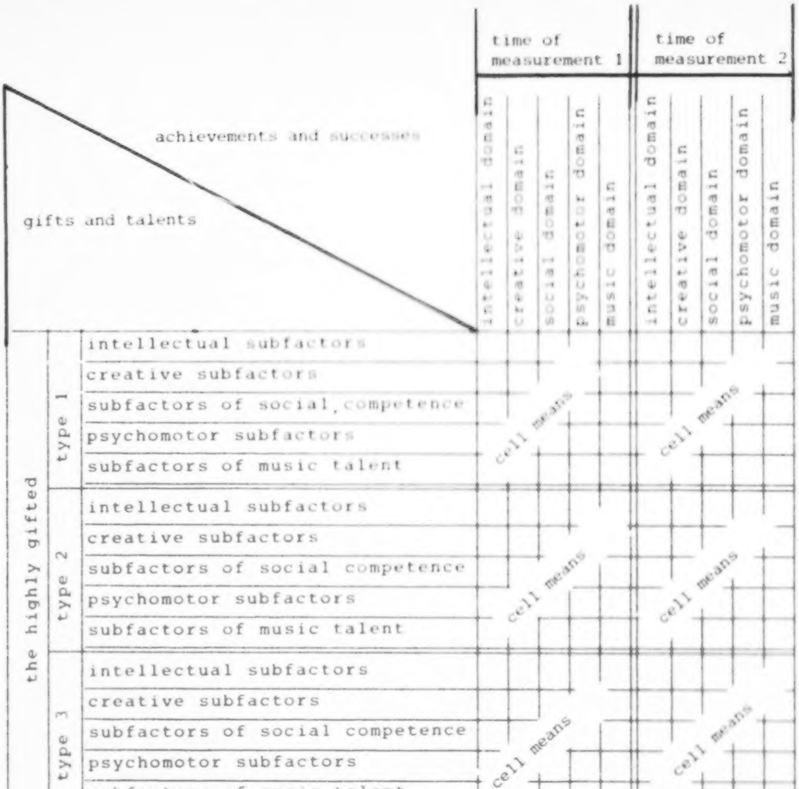


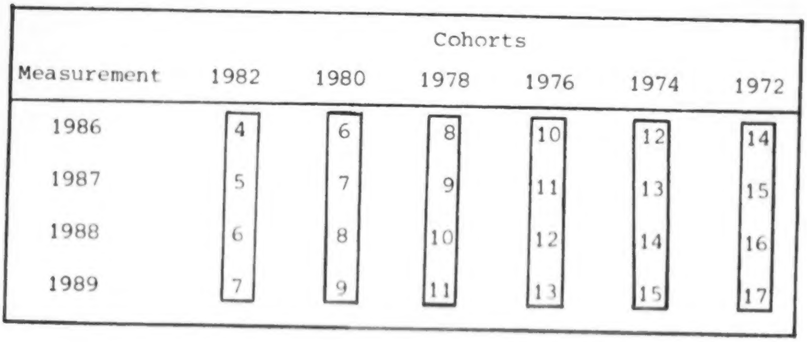
Figure 4: Design of analysis of variance with measurement points and the factors: talent dimension, giftedness type and experimental or control group for the prediction of area specific performance and success

achievement is separated and pooled (cf. figure 4) for 1) individual giftedness dimensions, 2) for the types of giftedness found, and 3) for the group of highly gifted in comparison with a control group of moderately gifted who have somewhat lower values in the giftedness factors than the highly gifted do. Depending on the questions raised, analysis of variance, discriminant analysis or regression analysis will be used. Figure 4 shows an example with a complex analysis of variance which includes the factors cohort, type of giftedness, experimental and control group, and giftedness dimension. The criteria are the area-specific achievements (collected over a period of years in a longitudinal study).

In addition to the abilities, other personality characteristics will be established as predictors or moderators (e.g. self- concept, achievement motivation, etc.).

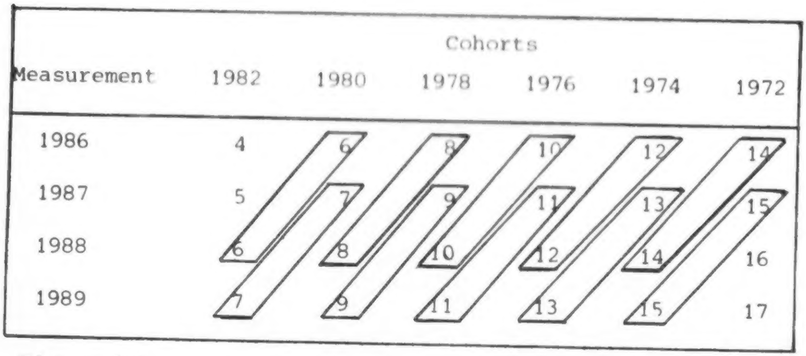
3.3 Methods of the Longitudinal Study

The measurement of ability and achievement will be repeated yearly for as long as the project is financed. The financial support from the Federal Government is tentatively planned for several years. Since six age cohorts will be studied, a longitudinal-sequential design (BALTES, REESE & NESSELROADE, 1977) will be possible. However, since the number of cohorts is greater than the number of instances of measurement, only age x cohort analysis for partial matrices of the total design are possible (cf. figure 5d). More extensive evaluation for age by instance-of-measurement (figure 5c) and for determination of age or cohort effects (according to SCHAIE, 1968; cf. figure 5a and 5b) will be possible. Through the use of appropriate statistical methods, the level of changes of various giftedness factors should be determined - whether the highly gifted remain stable in their achievements as compared with the fairly gifted; whether the giftedness patterns appearing at various age levels become more differentiated with increasing age, etc. An important condition for this determinations is the use of the same type of measurement (regarding content and method) of the individal attributes at each age level. Thus, method artifacts can be avoided in the age comparison. If we are successful in finding a battery of analogous tests so that reliable measurements can be made after longer intervals, this will create new possibilities in the identification of highly gifted. Admission to a program for gifted children can consider not only the individual's present state of giftedness and achievement but also his or her long-range development.



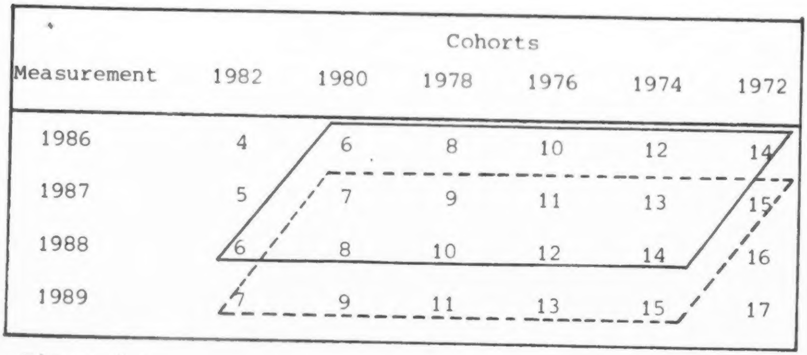
Measurement	Cohorts 1982	1980	1978	1976	1974	1972
1986	4	6	8	10	12	14
1987	5	7	9	11	13	15
1988	6	8	10	12	14	16
1989	7	9	11	13	15	17

Figure 5 a



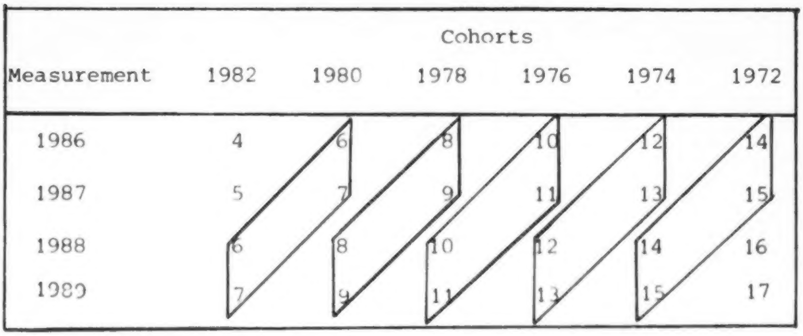
Measurement	Cohorts 1982	1980	1978	1976	1974	1972
1986	4	6	8	10	12	14
1987	5	7	9	11	13	15
1988	6	8	10	12	14	16
1989	7	9	11	13	15	17

Figure 5 b



Measurement	Cohorts 1982	1980	1978	1976	1974	1972
1986	4	6	8	10	12	14
1987	5	7	9	11	13	15
1988	6	8	10	12	14	16
1989	7	9	11	13	15	17

Figure 5 c



	Cohorts					
Measurement	1982	1980	1978	1976	1974	1972
1986	4	6	8	10	12	14
1987	5	7	9	11	13	15
1988	6	8	10	12	14	16
1989	7	9	11	13	15	17

Figure 5 d

Figure 5: Design of data analysis for the longitudinal study:. a) analysis of age effects, b) analysis of cohort effects, c) cohort x point of measurement, and d) age x cohort effect

3.4 Instruments

The test and questionnaire battery for determining factors of giftedness, achievement and personality is made up of many instruments. Two or more tests have to be used for some of the characteristics, e.g. one for the younger children (6–8 years), one for the medium range, and one for the oldest ones.

The cognitive abilities will be measured with the KFT-K and the KFT 1-3 (HELLER & GEISLER, 1983) or with the KFT 4-13+ (HELLER, GAEDIKE & WEINLÄDER, 1976, 1985), German forms of the Cognitive Abilities Test, Primary I and II (THORNDIKE & HAGEN, 1971). These tests measure (THURSTONE's) primary mental abilities: number, reasoning, space, and verbal comprehension. This measurement is supplemented by the 'Zahlenverbindungstest' (ZVT) from OSWALD & ROTH (1978). This connect-the-numbers test (ZVT) measures the speed of simple cognitive operations. As simple as this characteristic is, it serves as a good indicator of general intelligence (cf. JENSEN, 1982; VERNON, 1983).

For the measurement of creativity, both production tests (TORRANCE, 1972) and new scales for divergent-convergent thought process will be employed. The latter were developed by FACAOARU (1985) for use with engineers and were recently adapted for school children (FACAOARU & BITTNER, in press). The complex tasks measure goal-orientation of creative thought, flexibility in problem-solving strategies, self-control in motivation, tenacity, and other factors which traditional tests do not measure.

For the psychomotor abilites, new test procedures were developed which are economical to acquire and to employ. The younger subjects are presented with tasks from LEGO. Fine motor activities and constructions are called for. A complete test program was worked out for the older subjects which is presented on a computer. Simple tasks are combined with more strenuous ones (including perceptual speed, spatial orientation, and strategic planning) (Hany, in preparation).

Social competence and musical talent will be measured with new questionnaires which have been developed in our project and in part evaluated in pretesting.

Three motivational factors are to be measured: achievement orientation (hope for success, fear of failure), task commitment, and intrinsic vs. extrinsic incentive. We are employing subscales from Harter (1981), Hermans (1974), Lehwald (1982, 1985), and Smits & Vorst (1982). The students are also asked about their special interests. The interest questionnaires we have developed are directed toward academic/cognitive achievements, creativity, psychomotor ability and sports, music, and social activities. We have oriented ourselves here on proven methods (for example, Khatena & Morse, 1985; Khatena & Torrance, 1976; McGreevy, 1982; Taylor & Ellison, 1978).

In addition to these tests, we are also using questionnaires to measure creative achievements in many areas of interest. The model for this are instruments from Sylvia Rimm for all age groups (Rimm & Davis, 1980).

4. Sample Planning and Organization

Our sample must have the following characteristics:

(1) It should be relatively representative of the Federal Republic of Germany.
(2) At the end of the selection of highly gifted youth, the sample at each age level should be so large that enough subjects for each expected pattern of giftedness is present and no type disappears in following years through 'experimental mortality'.
(3) It must be about 33.3 times as large as mentioned in (2) above since the rate of selection for highly gifted is to be about 3%.

A simple computation gives us 30,000 subjects in the initial sample, inasmuch as 150 subjects are desired as highly gifted at each level. We have been striving for this number and despite political and organizational problems, we were able to acquire some 25,000 subjects during the last few months.

The first identification phase (teacher nomination) was completed in February 1986. During the months March to July 1986, the data collection for the second phase (tests and questionnaires) took place after which the final subject selection for yearly measurement will be established. Following the summer vacation, starting September 1986, another follow-up study is planned in which additional personal and environmental factors relevant to a causal model of creative achievement are to be collected. The first results on the quality of the instruments used as well as on the structure of giftedness and the relationship between giftedness and achievement should be ready in the fall of 1986. There is much left for us to do before then.

Summary

In the past highly gifted children were mainly identified using intelligence quotients. This practice led to a one-dimensional definition of giftedness in theory. Currently, multi-factor concepts of giftedness are preferred and also put into practice. Strangely enough, the concepts of giftedness that are employed are seldom analyzed regarding their validity or their connection to the achievement behaviors of the gifted or even with regard to developmental-psychological aspects. The research project being carried out at the University of Munich on giftedness follows a different path, that of the so-called typological approach. Assuming several dimensions of giftedness (intelligence, creativity, social competence, psychomotor, and musical abilities) or trait configurations, different types of gifted children are found. The types are defined here as various giftedness profiles which are empirically separate groups. In each group, those children with the highest values on the relevant dimension are the highly gifted.

In addition to the improved method of identification of gifted children and adolescents, the longitudinal study is based on the following goals: 1) Examination of the stability of types of giftedness over time; 2) Observation of changes in various individual types of giftedness over time and conditions causing change; 3) Examination of causal models in relation to potential adult achievement for each type of giftedness. The analysis of individual development processes and socialization conditions of highly gifted children and adolescents from the ages of 4 to 14 years will be carried out as well. The method design and the measurement instruments are described in detail and relevant problems of the research in progress are discussed. The results are not only useful for psychological counseling and educational nurturance of gifted students, but also they should create a reliable and valid basis for identification procedures.

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CHAPTER V

Identification of Highly Gifted Adolescents – Methods and Experiences

Günter Trost

1. Introduction

In this contribution a multi-stage program for the identification of highly gifted students is presented which was run by the *German National Scholarship Foundation (Studienstiftung des deutschen Volkes).* First, the organization and its functions will be introduced. Then the assessment program will be described, and some of the results of the evaluation will be discussed. The contribution will close with four theses on principles and methods of identifying the highly gifted.

2. Functions of the German National Scholarship Foundation

The *Studienstiftung* is the largest West German scholarship organization; it was founded in 1925. It is sponsored by the Federal Government (more than 80 percent of the budget), by the governments of the states *(Bundesländer)* and by private donors. The annual budget amounts to 25 million DM. Affiliated with the *Studienstiftung* is a research institution: The *Institute for Test Development and Research into Talent (Institut für Test- und Begabungsforschung).*

At present there are about 4,500 *Studienstiftung scholars*; they make up about one half of one percent of all West German university students.

The regular scholarship programs offered by the *Studienstiftung* cover the entire time span of academic studies, starting with the first semester at university, including one year of study abroad, and ending with the completion of the doctoral dissertation. The scholarships not only include financial support (the amount of the monthly allowance depends on the family income); in addition and even more important are the non-material offerings. These include such things as a) regular meetings of students of various disciplines with a professor from their university who is entrusted by the *Studienstiftung* with the honorary function of adviser and who organizes academic and cultural activities for group; b) interdisciplinary summer schools for students from all over the Federal Republic; c) excursions and participation in academic congresses. The students cannot apply for a scholarship themselves. The candidates must be nominated by the headmaster of their school - when they are about to leave school - or by a university professor during their academic studies.

This program for the identification of highly gifted students, which was also the largest program of this kind ever carried out in the Federal Republic of Germany, involving more than 45,000 people, will be presented in the following section.

3. A Three-Stage Program for the Identification of Highly Gifted Adolescents

The program took place in six of the eleven *Bundesländer* (states) of the Federal Republic. It was introduced in 1970 and was run until 1980 in the way described below (cf. figure 1); since 1981 it has been continued in a reduced form for financial reasons.

Every year, each of the schools leading to the 'Abitur' certificate - which is the prerequisite for admission to the university - were asked to nominate those pupils, who at the beginning of the last (13th) school year, were in the top ten percent in terms of average grades obtained in the 12th school year (first stage).

All nominees were invited to take a test *(Auswahltest der Studienstiftung = ATS)* which was administered once a year on the same day in all states that were involved in the program (second stage). The ATS is a general scholastic aptitude test, similar to the well-known American college entrance tests but tailored for the high aptitude level of this preselected group of nominees, i.e. it has a very high ceiling. The test consists of a verbal section containing 80 items and of a quantitative section containing 30 items (TROST, 1980). It lasts approximately three hours. Every year new test items are used; however, the items are pre-tested. Participation in the test is free of charge.

On the basis of a multiple cut-off procedure, about one third of the examinees were selected for the third stage of the program. Those who ranked among the top ten percent of all examinees either in the verbal or in the quantitative section and those who ranked among the top 25 percent according to their total test score were named 'finalists'. They were invited to three-day seminars during which members of the Foundation's selection committee had the opportunity to meet the candidates in interviews and to observe their performance in peer groups. First, each participant went through two interviews. The interviewers first studied a biographical questionnaire giving information about the candidate's personal background, the home situation, curricular and extracurricular interests and activities, academic motivation and career plans as well as 'unusual experiences'. In addition, the questionnaire served as a guideline for the interview. The duration of each interview was 45 minutes plus 15 minutes to take notes on the previous interview and to prepare for the

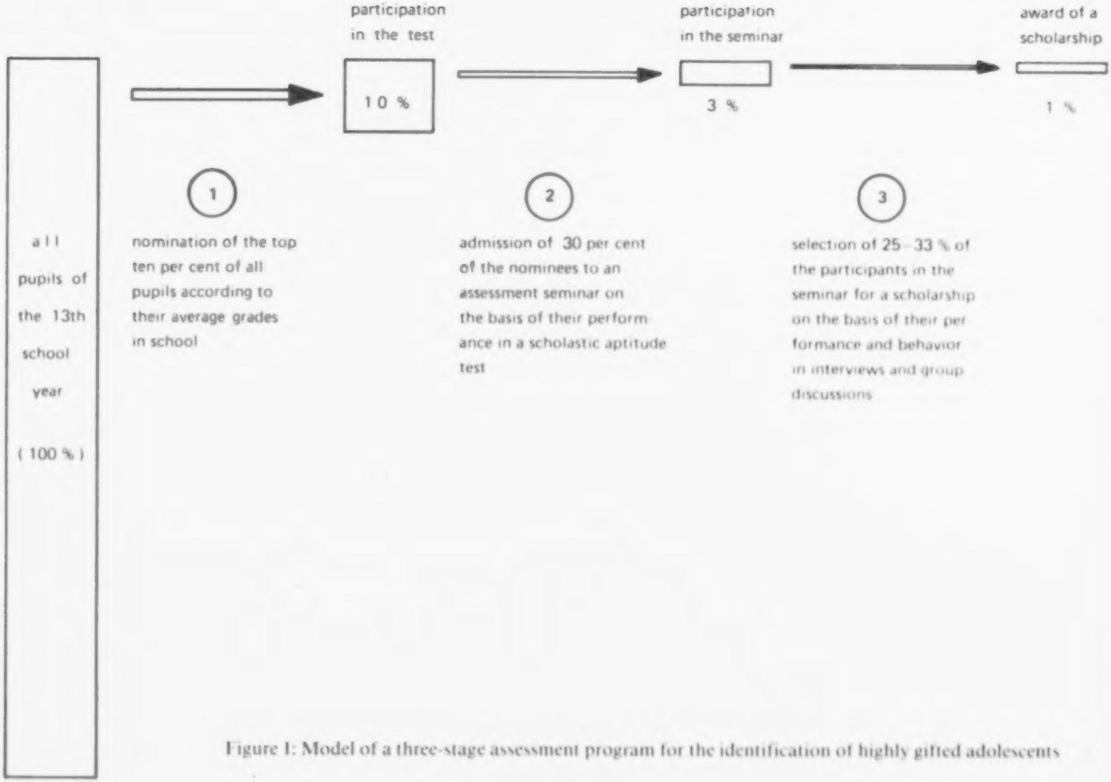
participation in the test
participation in the seminar
award of a scholarship
all pupils of the 13th school year (100 %)
10 %
3 %
1 %
1
nomination of the top ten per cent of all pupils according to their average grades in school
2
admission of 30 per cent of the nominees to an assessment seminar on the basis of their performance in a scholastic aptitude test
3
selection of 25–33 % of the participants in the seminar for a scholarship on the basis of their performance and behavior in interviews and group discussions

Figure 1: Model of a three-stage assessment program for the identification of highly gifted adolescents

next one. Second, the candidates took part in nine group sessions with eight competitors; in each session, one of the participants read a paper (15 minutes) on a topic of his or her choice. This was subsequently discussed by the group (for 30 minutes); a member of the selection committee observed the sessions. Third, each candidate participated in a 'leaderless group discussion', for one hour small groups of four or five candidates had to discuss a problem which was presented to them at the beginning of the session and they had to find a solution agreeable to all. Again, a member of the committee observed the session without intervening.

Each candidate was judged by four members of the selection committee; each 'judge' met 36 candidates, 18 in the interviews and 18 in the two forms of group discussions. More than 14,000 candidates attended the seminars in the years 1970–1980. The members of the selection committee were instructed to observe the following rules:

- An overall judgement on the 'giftedness' of each candidate (i.e. his or her qualification for a scholarship) was to be made on a ten point rating scale.
- The rating was to be based on the qualification of all of the 36 candidates that had been observed during the particular seminar; the full range of the rating scale was to be used; the mean of the ratings of each judge was to be about 5.5 points.
- The judges were not to discuss their individual ratings before the end of the seminar.

All candidates were put into a rank order on the basis of the sum of the ratings they had been given. According to their position in this rank order, one fourth to one third of the participants of the seminar were selected as *Studienstiftung* scholars. In this way, about the top one percent of the successive populations of pupils leaving secondary school were identified and awarded a scholarship which was valid from the first day of study at the university.

The assessment program aims at identifying, at a relatively early stage, "young people whose high scholastic giftedness and whose personality give reason to expect outstanding achievement in the general interest of society" (statutes of the *Studienstiftung*). So the award of a scholarship embodies a prediction of future achievement rather than the reward of past achievement.

The qualities listed below are considered as *indicators* on which the prediction of *outstanding achievement* can be based:

- high cognitive abilities,
- flexibility of mind,
- intellectual curiosity and drive,
- persistence at work,
- breadth and depth of interests,
- abilities to respond to emotional and aesthetic stimuli,
- a sense of responsibility,
- personal integrity.

While performance in school and performance in the test give information primarily on the candidates' intellectual capacity, academic motivation and study habits, the observations during the seminars with the individuals in the face-to-face confrontation and in the peer-group sessions allow for judgements in the domains of interests, self-esteem, social behavior, and more general personality traits.

4. Empirical Findings with the Assessment Program

A number of control studies have been carried out along with the assessment program.

(1) The results of internal test analyses with the *Auswahltest der Studienstiftung* indicated that the average difficulty of the test was well adapted to the high ability level of the pupils nominated for the assessment program; the values for the instrumental reliability of the test were satisfactory (Studienstiftung, 1974, p. 59).

(2) On a sample of 885 interviewees and 102 interviewers, the objectivity of the interview ratings, defined as the degree of agreement between two interviewers independently evaluating the same candidates, was examined. The coefficient of the correlation was .55. This finding confirms the wide-spread assumption that interviews are considerably less objective than standardized tests, however, the value is by no means lower than most coefficients for the objectivity of grading practices in school (cf. INGENKAMP, 1977). The correlation between the interview ratings and the ratings on the basis of the observations in group discussions was .48.

(3) An analysis of the intercorrelation of the three types of diagnostic information used in the assessment program (average school grades, test results, ratings in the seminar) yielded correlation coefficients between .20 and .30 (Studienstiftung, 1974, p. 59; TROST, 1984, p. 98). Therefore it seems safe to assume that the diagnostic procedures in the three stages of assessment do cover fairly different aspects of giftedness and thus have complementary functions.

(4) 2,550 pupils who had been nominated for the assessment program in 1972 were compared with a representative sample of 6,000 West German pupils of the same school year on the basis of the responses to the same biographical questionnaire (RAHN, 1978). It was possible to show that the nominees – i.e. the top ten percent of the pupils according to their average grades – differed considerably from the total group in the following features:

- The nominees apparently dispose of a higher 'potential of activity': not only do they do extremely well in school; the range and the intensity of their extracurricular interests and activities are much greater than in the total group.
- The nominees make use of non-compulsory opportunities to learn to a greater extent, e.g. by working in voluntary study groups, by participating in essay competitions etc., by taking voluntary foreign language courses, by selecting and using special literature.

Yet no marked difference could be observed between the socioeconomic background of the top pupils and the representative sample of pupils.

(5) While all of the studies reported so far were cross-sectional investigations – i.e. the data taken into consideration were all collected at the same time –, another study was designed as a follow-up validity study. All nominees of the year 1972 (N = 2,550) were subsequently observed during their academic career (LAAGLAND, 1978). Various criteria of academic success, satisfaction with the chosen area of study and self-esteem were obtained for 1,906 students four years after the assessment program had taken place.

For each of the three groups of all nominees (first stage), of the finalists (second stage) and of those who were awarded a scholarship (third stage of the assessment program), table 1 shows the percentage of those who received A grades, B or C grades and D or F grades in the first university examination which can be taken after 2 or 3 years of study. It should be noted that, as a whole, the group under consideration ('all nominees') scored well above the average in the first academic examination: 82 percent received A or B grades! Yet those who passed the scholastic aptitude test – the 'finalists' – did better in the examination and much more so those who passed the last stage of the as-

Table 1: Distribution of average grades in the first examination at the university for three different subgroups having participated in the assessment program for highly gifted adolescents

average grade in the first university examination		all nominees (N = 1,214)	finalists (N = 475)	scholars (N = 145)
'sehr gut'	(A)	34%	40%	51%
'gut' and 'befriedigend'	(B) (C)	63%	57%	48%
'ausreichend' and 'mangelhaft'	(D) (F)	3%	3%	1%

sessment program (34 vs. 40 vs. 51 percent received A grades). This finding may be partly due to the effect of a 'self-fulfilling prophecy' and to the positive effects of the scholarship itself.

As far as correlations between the predictors 'average grade in school' and 'overall score in the scholastic aptitude test' and the criterion 'average grade in the first university examination' are concerned, high coefficients cannot be expected given the fact that the whole group of nominees is highly preselected by their achievement in school.

Table 2 presents the values found in the follow-up study. The correlation between the average grade in school and the criterion of academic success is somewhat higher than the one between performance in the test and the same criterion. These results indicate that even among already highly selected pupils better school grades and better test scores tend to go along with greater success at the university.

Table 2: Correlation between the predictors 'average school grade' and 'overall score in the scholastic aptitude test' and the criterion 'average grade in the first examination at the university' (interval: 4 years; N = 1,202)

predictor	Pearson correlation r	level of significance
average grade in the 12th school year	.25	.001
overall score in the scholastic aptitude test	.16	.001

Apart from the studies already mentioned, which were specific for the three-stage assessment program, the *Studienstiftung* maintains long-term follow-up studies of their former scholars – regardless of the kind of assessment program that led to their selection. The results of the most recent analyses on 7,500 former scholars (RAHN, 1981 a–d, REINDL & RAHN, 1981) furnish further evidence for the assumption that Studienstiftung scholars, as a rule, have academic records far above average and, at a fairly early age reach professional positions of high responsibility. Again, the question poses itself to what extent the high academic and professional success is the effect of the motivational reinforcement connected with a scholarship, with the personal counseling, the various educational opportunities and intellectual challenges it provides, and to what extent it is the confirmation of a valid system of identification and selection of the gifted.

5. Four Theses on the Identification of the Highly Gifted

On the basis of the experiences with the assessment program described above, four theses on principles and methods of identifying highly gifted students can be put forward:

(1) Identification of the highly gifted is basically a prediction of future achievement which must be empirically validated – on the students selected and on control groups.

(2) High-level cognitive abilities are necessary but not sufficient indicators for the identification of the highly gifted; interests, attitudes, motives and working habits must also be taken into account.

(3) Outstanding past achievement in particular areas ranks among the most important predictors of outstanding future achievement in the respective areas.

(4) For a wide-range identification of the highly gifted a multi-stage assessment program allowing for the combination of a) an evaluation of previous achievement, b) the assessment of the cognitive abilities by means of standardized diagnostic instruments and c) the judgement of more general personality traits and social behavior on the basis of personal encounter (in interviews, in group discussions) seems to be both economic and valid.

Summary

A three-stage program for the identification of highly gifted adolescents was run by the German National Scholarship Foundation (Studienstiftung des deutschen Volkes) in the years 1970–1980. Forty-five thousand adolescents in 6 states (Länder) of the Federal Republic of Germany participated in the program. The stages of the assessment program consisted of:

- *the nomination of the top ten percent of all pupils of the 13th school year based on their average school grades;*
- *the admission of 30 percent of the nominees as 'finalists' to a three day assessment seminar on the basis of their performance in a high-level scholastic aptitude test;*
- *the award of a scholarship to 25–33 percent of the finalists on the basis of their performance and behavior during the assessment seminar where the candidates went through two interviews, presented a paper, and participated in a series of group discussions.*

Several control studies were carried out along with the assessment, investigating the reliability of the diagnostic instruments and procedures, the intercorrelation of the different types of diagnostic information, typical differences between the participants in the program and the total group of West German *pupils in the 13th school year, and the predictive validity of the assessment procedures in view of the future academic success of the participants.*

On the basis of the experiences with the assessment program and the results of the control studies, four theses on principles and methods of identifying highly gifted adolescents are presented.

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CHAPTER VI

Identification by Provision: Limited Field Test of a Radical Alternative for Identifying Gifted Students

Bruce M. Shore & Athanassios Tsiamis

There is no standard way to identify giftedness but the literature is absolutely clear that such identification is widely based on IQ measures, alone or in combination with others, even in the face of increasing recognition of the inadequacies, perhaps even injustices, of such practices (ALVINO, MCDONNEL & RICHERT, 1981; YARBOROUGH & JOHNSON, 1983).

Research on identification has generally compared single selection criteria, the goal being to show that one was better or worse. In recent years, as the definition of giftedness has broadened, the emphasis has shifted to comparing a set of criteria to a single one. There is virtually no research which explores the effect of having no formal selection procedure at all, offering a program labeled and designed for the gifted, but through an essentially 'open door' (BIRCH, 1984). This process can be called *selection by provision,* an expression attributed to Her Majesty's Inspector of Schools, Tom MARJORAM of London. Do children selected by provision differ on any identification criteria from those admitted to programs in more conventional ways?

This study compares a small number of psychological and social characteristics of two groups of gifted children, one identified on a relatively 'open' criterion, selection by provision, and one on the basis of traditional aptitude and achievement criteria. An absolutely 'open door' program is difficult to create for such a study as this; the realities and ethics of educational research limit any study of this type to be an approximation of the ideal in some respects. The expectations were that the groups would be very similar in overall measures, based on the wide range of correlations among measures reported in the literature, but that the selection-by-provision group would include more low achievers, children with spatial rather than verbal ability, and children of low socioeconomic status.

1. Method

Subjects were 174 children in grades four to eight (ages 9 to 13) attending a summer school for the gifted sponsored by McGill University jointly with a major Montreal school board (Ross & SHORE, 1984, 1985; SHORE, 1985), and 68 children attending a summer school offered by a suburban school board.

The students who attended the McGill school were *not tested* for admission. Parents were asked to indicate if the child met any of the following criteria a) being in a gifted program, b) being identified as eligible to be in one, or c) being recommended by a parent, teacher, or any other adult.

The suburban children could be *admitted* by one of two routes: a) Being first selected by their teachers using the RENZULLI-HARTMAN Scales (RENZULLI et al., 1976), then scoring at the 90th percentile in the Canadian Test of Basic Skills, or b) being nominated by parents in combination with a high IQ on the WISC-R, then subject to approval by a panel of teachers and psychologists.

Comparison of the two overall groups provided the first test of the research question. Since the third admission criterion for the McGill group was the most 'open', children whose parents indicated that basis for admission were compared to the others, and in the suburban school, children whose parents indicated in a questionnaire that they were aware of their child's giftedness before the school recognized it, despite the basis for admission, were compared with those who were first identified as gifted by the school through formal testing (cf. table 1).

Table 1: Sample Design

	School	Identified	Adult	Identified
	Boys	Girls	Boys	Girls
McGill Group	33	61	33	45
Suburban	18	36	6	8

Two groups of measures were used. To assess psychological characteristics we used the OTIS-LENNON (Form J, Elementary II and Intermediate) verbal IQ test (OTIS & LENNON, 1969), the RAVEN Standard Progressive Matrices test of nonverbal IQ (RAVEN, COURT & RAVEN, 1977), the Unusual Uses, Consequences and Drawings tests from the TORRANCE Tests of Creative Thinking (1974), and parents' overall reports of their children's school performance. Personality and social measures included the Intellectual Achievement Responsibility measure of academic locus of control (CRANDALL, KATKOVSKY & CRANDALL, 1965), the PIERS-HARRIS self-concept scale (PIERS & HARRIS, 1969), the Dependence-Proneness Scale (FLANDERS, ANDERSON & AMIDON, 1961) and a parent questionnaire asking for demographic information and their concerns about the role in the identification of giftedness in relation to the school's. The questionnaire was based on the work of Ross (1985) and RENZULLI, REIS & SMITH (1981). The data were collected during class time in the summer of 1984.

Correlation matrices for all measures were employed to confirm their distinctiveness. Multiple analysis of variance was conducted for the identification procedure and first identifier of giftedness. Chi-squares and cross-tabulations were used to compare the frequencies of occurrence of traits and the similarity of the distribution of grades at regular school. The same statistics were used to assess parents' familiarity with giftedness. Finally, frequency-distribution tables were constructed to assess the distribution of special abilities of skills of the children, as reported by the parents. Statistical results and tables are not presented here, due to the limitations of space in such a volume as this. However, as much detail as possible is given about the results in a narrative form.

2. Results and Discussion

Correlations among all the measures employed were below .20 and even negative except between the OTIS-LENNON and RAVEN tests (r = .30), and among the TORRANCE subtests (r = .30). This was taken as evidence that the variables investigated were reasonably independent of each other.

Only four of 16 possible differences were found to be statistically significant on comparison of the school groups. The McGill group scored higher than the suburban on one TORRANCE score (divergent figural) and boys did better than girls on divergent figural, verbal and total, in both schools. This supports the conclusion that on measures of aptitude and personality, the two groups are essentially not distinguishable. These results offer only slight support for the hypothesis that the identification-by-provision group would include more children with high spatial rather than verbal ability. As a matter of curiosity, the average OTIS-LENNON IQs in both schools were high, 124.6 at McGill and 122.6 in the suburban school.

Both groups were equally high on the PIERS-HARRIS self-concept scale, higher than the mean of the population on which the test was standardized (as previously found by KETCHAM & SNYDER, 1977, and KARNES & WHERRY, 1981). Contrary to previous results (RODENSTEIN & GLICKAUF-HUDGES, 1979, and STOPPER, 1978), no sex differences were found.

An obscure three-way interaction was found to be statistically significant on the personal independence scale. Students admitted on the basis of school selection were more personally independent, especially the boys in the suburban sample. There were no differences in main effects nor other interactions. In the standardization sample, boys were also found to be less dependent. Most importantly, both groups were more independent than the standardization sample, that is, than unselected children, a result previously reported by LANDAU (1981) and LUCITO (1964).

Students from the two schools did not differ significantly on academic independence, however, this was at about the same level as the test standardization sample. This was unexpected and in contrast with studies showing that gifted children have high internal locus of control (DAVIS & RIMM, 1985; MILGRAM & MILGRAM, 1976). As in the standardization sample, girls were slightly more academically independent than boys. It seems useful to have distinguished between personal and scholastic independence.

The following analyses compared those children, in either school, who were first identified as gifted without formal tests by parents, teachers, or other adults, with those first recognized by formal testing conducted by the school.

On the eight intelligence and creativity measures, only two significant main effects were found in the analyses of variance. Boys at the McGill school obtained higher divergent verbal and divergent total scores than girls. These two are obviously related, and unrelated to the admissions criteria. As an aside, this pattern of sex differences, though not statistically significant, was observed throughout the study. The main conclusion is that there is no important difference between the groups on the criterion measures. At the suburban school, the boys' scores were significantly higher only on the divergent total score. For the benefit of the reader interested in IQs, the OTIS-LENNON average IQ for the formally tested group was 125.9; for the adult-identified group it was 123.4.

In neither case was there any significant difference related to who first identified giftedness, though the following points are of some interest.

There were no statistically significant differences in self- concept, but performance was high compared to unselected children. Previous results are contradictory; LEHMAN & ERDWINS (1981) reported higher scores for gifted children, but COHEN & COHEN (1983) and ROGERS (1980) found the gifted to be lower. TIDWELL (1980) also compared IQ-selected versus teacher- or administrator-nominated selection and found no differences in self-concept related to identification procedure and sex but significant differences in terms of race, not a concern in the present study but a reason for expecting socioeconomic differences.

There were no differences with regard to independence, personal or academic, but both groups were more personally independent than the normative sample. As before, intellectual independence was similar to that for unselected children, and boys again showed some advantages.

To recapitulate, both the identified-by-provision and traditionally identified groups shared the following characteristics: Creativity, high intelligence, high positive self-concept, and average intellectual independence (perhaps reflecting common school experiences in this regard). Personal independence was higher in the traditionally identified group, although it was higher than the norm in both. No differences, direct or indirect, were observed in social composition, except for a slight indication of openness to underachievers in the by-provision group; this remains to be examined more directly.

Parents were asked how much their view should count in the identification process, if they were familiar with characteristics of gifted children, if schools should play the major role in identification, and had the school not endorsed the child's enrollment in the summer program, would they have enrolled their child anyway.

There were no differences between the schools on the parents' view of their role. They believe they can be useful in the identification process. Previous studies indicated that parents are relegated more to lobbying than being involved in identification (NATHAN, 1979; O'NEIL, 1978). About 82% from both schools answered positively about being familiar with characteristics of giftedness.

The extent of school responsibility for identification was examined in three ways. First, there were no significant differences between the two schools; 70% at McGill and 90% at the suburban school accorded the school a major role in identification. The slight difference is in the direction that would be expected. Second, within the McGill group, responses of parents of adult-nominated children were compared with the others'. More nominating parents at the McGill than suburban school disagreed that the school should be the major identifier. This could well be an artifact of the design of the study, but indicates that selection-by-provision does attract children whose parents view the role of the school differently and who may not feel to the same extent that they are adequately served by their schools, even if there are few differences of any importance to be observed among the children themselves. This reminds educators that schools serve parents as well as children and the community as a whole.

There were no differences on the fourth question: Most parents agreed that they would enroll their children anyway.

In summary, parents feel positively about their inclusion in the identification process, and confident that they are familiar with the characteristics of gifted children. Parents in the identification-by-provision setting feel that the school is less important in identification.

Parents were also asked to comment on their children's leadership qualities among peers, curiosity, ability to combine unrelated ideas, and seeking independent answers to problems. These are characteristics frequently reported in the literature as applying to gifted children. No significant differences were found when comparing the parents from the two schools. Most parents, 75%, selected the two highest categories on the five-point scale. When the responses for the two groups within the schools were examined, some differences were found. At the McGill summer school, children admitted on parental recommendation were rated higher in creativity and independence. There were no such differences at the suburban school. Students in all groups were high and equal in leadership and curiosity. No differences were found on the measures of these qualities, as reported earlier, but there is no reason to presume the tests and parents' opinions are measures of exactly the same qualities. These results indicate that some children might not have been accepted on the basis of a school testing program, but were, in fact, appropriately enrolled.

No differences were found among any of the groups on the children's special skills or talents as reported by the parents, such as music, drawing, acting, general creativity, mathematical ability, and verbal expression.

Finally, parents were asked to describe their children's academic performance in regular school on a five point descriptive scale:

- Outstanding, superior, clearly at the top of the class.
- Very good, no problems, but not at the top of the class.
- Very good at some things, not as good at others.
- Average, and sometimes even less than average.
- Generally not very good, this has been a problem.

Comparison groups were constructed as in the earlier analyses. Chi-square tests were not significant. Students in both schools were reported to have performed similarly, nearly half the children being at the top of the class, most of the rest in the second and third categories. More parents at the suburban school indicated the second category and more at McGill the third, an interesting but not statistically significant result. It is consistent with earlier observations about these groups. In both schools more than 90% of the replies were in the first three categories. This was to be expected at the suburban school. At the McGill program it indicates more variable performance across subjects, hence possible greater inclusiveness of the selection process. It would be better, in subsequent research, to have actual performance data from school records.

Overall, all groups were reported by their parents to have performed well at regular school. Most of the students seem to have done much better than the average child; in fact, half of them were described as outstanding at school, while the rest were reported as being very good in all or some subjects at school. These findings challenge the expectation that underachievers would be included, especially at the McGill program.

3. Conclusions

Identification-by-provison was found to generate a summer-school population essentially not distinguishable from identification based on high scores on achievement or IQ tests. Parents and teachers can be accurate and effective identifiers of gifted students, supported by the fact that no difference was found in the performance on all measures by the populations of both schools when the independent variable was taken to be who first identified giftedness in the child, the parent or school. Parents and teachers having identified the giftedness without a checklist makes the success of the identification even more valuable. No advantages were found, however, for identification-by-provision in the identification of minority or culturally disadvantaged children, although there were indications that gifted underachievers were included to a greater extent than following identification with tests; the study was not, however, an adequate test of these effects.

The study does not contend that testing is invalid and fails to identify gifted children. However, identification by provision appears to bring a comparable group together, a group that might be called 'garden-variety' gifted who do well in school and score well on tests. Identification by provision and substantial reliance on the general recommendations of parents and teachers are strongly endorsed in the recognition and service of gifted children.

3.1 Educational Implications

Identification by provision is in accord with a view of education of the gifted which calls for a more 'open-door' policy in the identification process.

Because of certain circumstances that exist in the nature of testing, particular types of children who have potential are not identified as gifted. The best known groups of these children are minority, culturally or economically disadvantaged gifted, and underachievers. In this study such children were not notably found, except possibly underachievers in some subjects, under the identification-by-provision mode. This may simply be a consequence of the fact that the two programs in this study were summer programs for which a fee was required; the strategy remains to be tested in a public school system during the school year. Nevertheless, identification by provision is philosophically more open to serving children who would be excluded by other selection procedures, and the onus is on educators to use the potential savings from the possibly unnecessary mass testing to concentrate on selective searches for hard-to-find gifted and potentially gifted children, for scholarships for the economically disadvantaged gifted, research, program development and implementation.

A general educational implication then is that the educational system might serve its general and gifted population better by using identification by provision. Parents and teachers are the least expensive identification resource and it is to the advantage of differential education for the gifted if they would be well used. Administrators also have to bring schools into contact with parents since parents feel excluded from the identification process.

3.2 Limitations of the Study

Caution is required in accepting the results of this study. It is primarily descriptive, both schools operated on a strictly voluntary and fee-paying basis, and the tests and questionnaires used, although they seemed best for the study, may not enjoy universal acceptance. However, the fact that so few differences were found between the two programs is an indication, at least, that approaches such as identification by provision have merit. This is certainly a radical alternative to commonly advocated practice, but it may well be sound and highly defensible pedagogically, philosophically, cost-effectively, and legally. What is needed now is reports of the impact of field tests in regular school settings, especially in schools that have traditional identification processes now in place and can collect baseline data against which to examine the effects of the change.

Summary

Among the most frequently cited recommendations for the education of gifted children is the use of multiple criteria in their identification. This advice has been arrived at by comparing the results of the use of multiple criteria with those of a single measure in various circumstances. What has not been fully investigated is the effect of not having any formal identification program at all.

Two differently selected groups of gifted children were compared. The first consisted of children largely identified by provision, accepted on parents' or another adult's recommendation. The second was selected on the basis of measured school performance and aptitude tests. Data were collected on aptitude and personality measures commonly associated with selection for programs for the gifted.

No statistically significant differences of any importance were found. The group identified by offering a suitable program and opening the doors to those interested was not distinguishable from the group selected by the school on the basis of formal tests. It was concluded that formal selection by testing was not necessary for a substantial number of gifted pupils, but that resources for such services could be redirected to program development and services, and to the search for hard-to-find special populations of gifted children.

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CHAPTER VII

The Identification and Labeling of Gifted Children. What Does Research Tell Us?

Ann Robinson

In his address to the Fourth World Conference on Gifted and Talented Children in Montreal, Professor Albert Jacquard, the eminent French geneticist pleaded with conferees not to use the word or label 'gifted' (Jacquard, 1983). He found the word to be "disastrous, a linguistic mistake". In labeling certain children gifted and implementing change in school to their advantage, Jacquard cautioned that we "flatten all those who are termed underendowed" Jacquard's statements are a 'tough' charge to researchers and educators interested in identifying gifted students and subsequently counseling them. Thus, I am delighted to join the symposium today to take an investigatory 'poke' at this issue.

1. The 'Labeling' Concept in Talent Research

Before proceeding, it is necessary to define what is meant by *labeling* and to outline the scope of the present paper. First, labeling means assigning a categorical descriptor to a child primarily to secure needed educational service. Thus, labeling carries with it more than stereotyping: It implies that some sort of differential treatment, or assistance, or adaptation of the educational system is required once the child has been identified as gifted. Of course, broadly considered, many of the effects of labeling are the effects that special educational interventions have on gifted children. When we learn from Kulik & Kulik (1984) that acceleration has positive effects on the achievement of gifted adolescents, such a finding can be interpreted as information about the practice of labeling children gifted. Studies which address the efficacy of school programs for the gifted are relevant to the issue of labeling; however, program evaluation studies are not the focus of this discussion. Instead, these remarks focus on the social and emotional consequences of labeling gifted children. Does the label do them harm or good? What do others think about it? Are the effects positive? Negative? Or mixed? By examining the empirical base, we may have a better idea of the consequences of identifying and labeling some children gifted and how we might help the labeled child and others understand that label.

2. Results of Labeling Studies about Talented and Gifted Children

Very few empirical studies have directly investigated the effects of labeling on the gifted from the perspective of social deviance theory, the generally accepted framework of labeling research (GUSKIN et al., 1983). Those studies that are available report contradictory findings: Labeling has positive, negative, and no effects (Robinson, 1984).

Most labeling studies done on the gifted investigate what others think about a child or youth so identified. However, there are at least two or three studies which examine labeling from the perspective of the labeled child, and we will consider these first. An early, classic study by TANNENBAUM (1962) on adolescent attitudes toward academic brilliance is essentially a labeling study. TANNENBAUM found that in and of itself, the 'brilliant' label was not considered negative by heterogeneous groups of adolescents. However, when a youth was described as brilliant *and* studious *and* uninterested in sports, he was viewed quite negatively. TANNENBAUM concluded that the 'brilliant' label was not what caused hostility, but the appearance of other attributes considered suspect by adolescents – studiousness and non-athleticism. It is interesting that ability was not related to student perceptions: Gifted youths were as likely to view brilliant, studious, non-athletes as negatively as their average ability peers.

Using TANNENBAUM's instruments, MORGAN (1981) replicated the study in Colorado. Like TANNENBAUM, MORGAN found athleticism rather than brilliance to be the salient variable. But in contrast to TANNENBAUM, MORGAN found the highest status was ascribed to the brilliant *studious* athlete (TANNENBAUM's subjects rated the *nonstudious*, brilliant athlete highest). It seems likely that differences in school emphasis on achievement may have affected how the two groups of adolescents felt about studying. However, in both the TANNENBAUM (1962) and MORGAN (1981) studies, the powerful label was 'athlete' not 'gifted'. These two studies would seem to suggest that at least in the school setting, the gifted label by itself is not necessarily perceived negatively.

In fact, in a study which investigated gifted students only, GUSKIN et al. (1983) found that able adolescents attending a university summer program viewed themselves and the gifted label positively. These students also reported negative attitudes from others only 14% of the time. These data led GUSKIN et al. to conclude that contrary to popular notions, the gifted were not rejected by their peers. What is missing, of course, are a series of labeling studies investigating the effects of the gifted label on younger as well as older children over time. At present we can only speculate on the perceptions of the labeled child or youth about the gifted label. However, the limited empirical literature does not indicate that young people view the label in a particularly negative fashion.

In addition to examining the effects of the gifted label on the labeled individual, it is also important to review the effects of the label on the family members and school acquaintances of the child or adolescent. The acceptance of rejection of these significant others has implications for successful counseling, and the labeling literature does provide some insight about the consequences of our practices.

In the context of the school, perceptions of the school personnel and of the classmates of labeled children have been a concern (Clark, 1979). For example, what do teachers think about labeled children, and do their perceptions affect their treatment of these students? There is some evidence to suggest that teachers view gifted students negatively (Jacobs, 1983) and will translate these feelings into grading practices which assign lower grades to children labeled gifted than to those labeled average (Craven, 1980). However, the findings are anything but consistent. Unlike Craven (1980), Robinson (1983) did not find pre-service teachers systematically grading papers of gifted children lower than those of unlabeled children.

In terms of teacher attitudes, a replication of Tannenbaum's study with pre-service and inservice teachers found that like adolescents, teachers were more likely to think positively or negatively about students based on their athleticism, rather than their brilliance (Cramond & Martin, 1985). Brilliant, studious, *non-athletes* were most disliked. Brilliant, *non-studious*, athletes were viewed positively.

Three other studies also investigated the effects of labeling on teacher perceptions and behavior. Rubovits & Maehr (1971) analyzed pre-service teacher interactions with students labeled gifted and average and found that the quality of teacher interaction differed due to label. Students labeled gifted were called on and praised more than average students, thus the effects of the label did not seem to be negative. In a follow-up study, however, they found an interesting twist when they included race as a variable. Black students labeled gifted were given the least attention, praised least, and most criticized when compared with average black, gifted and average white students (Rubovits & Maehr, 1973). As with the case of non-athleticism and studiousness, the race variable rather than the gifted label seemed to be the critical determinant of teacher disapproval. The interaction between giftedness and other attributes is the subject of speculation by Maltby (1984). In an investigation of British primary and middle schools, Maltby found several instances of teachers delabeling children who measured high on psychometric criteria but were from working class homes. Although the sample was too small for any empirical analysis, again there seem to be variables like athleticism, race, and SES which 'affect the effects' of labeling children gifted. Overall, research on teachers' perceptions of the gifted label indicate that they are not overwhelmingly negative and that variables other than the gifted label may be more powerful indicators of teacher attitudes.

For those interested in the counseling needs of the gifted and in the role counselors and psychologists play in identifying the gifted, there are more disturbing indications. These school personnel groups, rather than teachers, appear to be negative towards children labeled gifted. The few American studies of these groups are attitudinal surveys which generally ask questions about stereotypes of gifted children and about procedures for identifying and programming for them. Consequently, it is difficult to disentangle counselors' perceptions about providing special services for them without analyzing the attitudinal instrument item by item.

However, in two studies, counselor attitudes toward children labeled gifted and school programs for them appear to be negative.

WEINER (1968) found psychologists and psychometrists held less favorable attitudes toward the gifted than teachers, university faculty, administrators, supervisors, and students. School personnel in districts with gifted programs were more favorable than those districts without programs. Fifteen years later, however, DEIULIO (1984) found that guidance counselors and school psychologists in schools with programs for the gifted were more negative about selection and grouping of the children than about role of teachers and administrators or the behavior of gifted children. Although the presence or absence of a gifted program affected attitudes differently in the WEINER (1968) and DEIULIO (1984) studies, overall, counselors and psychologists do not react positively to the gifted label. In light of the important role counselors and psychologists play in identifying gifted students and in providing guidance services, this apparently negative view of children labeled gifted is cause for concern.

In summary, the attitude of school personnel toward children labeled gifted is somewhat mixed. Positive, negative, and no effects have been reported for teachers, and two studies indicate counselors and psychologists are affected negatively by the label.

Labeling children gifted also has consequences for the family. In a study of twelve families, FISHER (1978) identified parents of high IQ children. Six of the children were labeled, that is they were selected for a school gifted program. The remaining six (although also high IQ) were not selected and were therefore considered unlabeled. FISHER found, however, that the parents perceptions' were more important than the school label. In the cases where the parents disagreed with the school evaluation, parents with unlabeled children labeled them anyway. The parents whose children were labeled gifted by the school but who did not agree with the school's evaluation tended to see the label as a nuisance. They had difficulty with the concept of giftedness and questioned the appropriateness of the label for their child. In either case, school or family label, the labeling process disrupted the family when there were non-gifted siblings.

Building on Fisher's study, Cornell (1983) found that non-gifted siblings of gifted children were significantly less well adjusted than other siblings. Cornell (1983) investigated the family system and found that parents who perceived their child as gifted reported feeling prouder and in closer relationship to the labeled child than parents who did not perceive their child as gifted. Despite the apparently positive effects that the label might have on the relationship between the labeled child and parent, Cornell focuses on the finding that non-gifted siblings suffer, i.e. they are significantly less well adjusted. Taken together, the Fisher (1978) and Cornell (1983) studies indicate that labeling children gifted has negative outcomes in multiple child families with both gifted and non-gifted children.

3. Conclusions

What, then, does this review tell us about the consequences of identifying and labeling some children? First, I think we must be very cautious about generalizations based on such limited and frequently contradictory literature. Therefore, these conclusions are offered tentatively and with the intent that further research will help us revise them. Despite the concern that labeling will inevitably have negative effects, the small research base does not unequivocally bear this out. Gifted adolescents seem to feel positively about the label. Parents of labeled children report positive relationships with their children. Teachers seem to interact positively with gifted children or to ignore the gifted label and respond to other characteristics like studiousness or race. The gifted label is not clearly a stigma.

Neither is it a 'carte blanche' halo. Two areas are particularly sensitive to the effects of labeling and both have the potential for negative consequences. First, the disruption which occurs in two children families with one labeled and one unlabeled child is worrisome. As professionals, we need to be more attentive to the effect school initiated labeling has on the family system. Perhaps our follow-up and parent education programs are not as intensive as they might be. Secondly, the negative attitudes of counselors and psychologists toward the gifted label are likely to affect labeled children, their families, and school programs as well. Many schools rely in part on these personnel for identification of the gifted. Subsequently, counselors may also play an important role in delivering services directly to labeled children and youth. They may organize special seminars, plan schedules, and offer career guidance to the gifted. If they view the labeled child or youth negatively, it is likely to have an effect on the kind and quality of assistance they give to the child and family.

In summary, it appears that the process of identifying and labeling children gifted is likely to affect the labeled child and those around the youngster. Research has yet to specify who is most affected and under what conditions, but an early pass at an undeveloped literature would indicate the consequences of the gifted label are not all negative despite concerns to the contrary.

Summary

Labeling is defined as assigning a categorical descriptor to a child in order to secure special educational services. Although the practice of labeling is widespread in American schools, there is considerable concern that singling children out for special programs will have negative effects. In particular, parents and educators express concern that labeling the child as gifted may cause social isolation, snobbishness in the child, or retaliation from hostile teachers. However, these possible negative effects must be considered in light of the positive effects of special school programming for the gifted.

The gifted are labeled because they deviate from the norm in a positive way; they are 'above average' in intelligence, creativity, or in whatever constellation of factors used to identify them. However, their positive placement in the distribution does not guarantee them acceptance or appreciation. As Weiss & Gallagher *(1980) pointed out, society is quite ambivalent toward gifted individuals. They may be admired, but they are also envied and mistrusted.*

*The effects of labeling children gifted are, at present, unclear. The few empirical studies investigating labeling report a variety of conflicting findings (*Robinson*, 1984). Reasons for these contradictory findings may be due to the theory guiding labeling research and, in part, to the different populations studied. In either case, the issue of identifying and subsequently labeling children as gifted continues to be an interesting and controversial area of investigation.*

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CHAPTER VIII

A Taxonomical Approach to Qualitatively Differential Didactics for the Gifted in a Democracy

Hans G. Jellen & David L. Gulley

1. Introduction

The term *Differential Education for the Gifted (DEG)* was developed by Professor Virgil WARD in order to describe an educational foundation for the intellectually gifted. WARD established the term to supercede the semantically misleading and often abused terms of 'creative, gifted,' or 'talented education.' In 1961, WARD formulated a group of twelve theoretical propositions with ensuing corollaries to establish the foundation for DEG experiences.

The foundation of this article is based on WARD's first proposition which states:

> (1) That the educational program for intellectually superior individuals should be derived from a balanced consideration of facts, opinions based on experience, and deductions from educational philosophy as these relate to the capacities of the individuals and to the probable social roles which they will fill (p. 81).

As an extension of WARD's proposition, the authors' evolving knowledge base for DEG is not only theoretically organized but also adds clarification and justification to a much needed conceptualization of DEG.

2. The Description of DEG wihtin a Taxonomical Framework

2.1 Educational Taxonomies

It is necessary to clarify the subject to be taxonomized first before one can construct a relevant and significant taxonomy for general theory or specific objectives. An assessment of educational taxonomies displays a classificatory focus of specific intended behaviors. The following examples confirm this point.

The taxonomies of BLOOM (1956) and KRATHWOHL (1964) classify the learner's cognitive and affective domains and the resultant thoughts, feelings, and actions from the learner's participation in the instructional process. The purpose of moral education, according to KOHLBERG (1958), is to permit the learner to achieve higher levels of moral development. To facilitate this goal, KOHLBERG generated a classificatory scheme distinguished by increasingly complex patterns of thought. In his taxonomy, the learner proceeds from one level to the next toward the highest level or moral reasoning in which the learner is capable of thinking and reasoning about justice. SIMPSON (1965/66) designed a taxonomy which classifies "finely coordinated motor skills with a great deal of muscle control" (p. 140). SIMPSON's taxonomy consists of five operational levels constructed for training in vocational areas or specialized artistic skills. A functional taxonomy for classifying observable gross motor movements was also developed by HARROW (1972). Educators in physical education can formulate objectives specific to gross motor skill development by utilizing her taxonomy.

The preceding examination of educational taxonomies reveals that the desired behaviors are organized along a continuum in a hierarchical manner. It is significant to note that *none* of the preceding hierarchical classifications are presented in the form of a general education theory. These classifications are piecemeal endeavors designed to develop specific behaviors in learners.

DERR (1973) and HOLMES (1981), on the other hand, developed more comprehensive taxonomies. DERR's taxonomy focuses upon schools and their adoption policies concerning the kinds of social purposes found in their policy statements. His taxonomy was designed to aid boards of education, administrators, teachers, and parents in formulating rational decisions concerning the suitable social role of American public schools (p. viii). HOLMES' classificatory system for data analysis in comparative education includes *normative* patterns (i.e., laws exemplifying the theoretical bases of individuality, society, and knowledge), *institutional* patterns (i.e., sociological laws exemplifying the operation of institutions), and *natural* patterns (i.e., the physical world beyond people's immediate control); thus providing comparativists with an important tool to select, classify, and analyze relevant educational data from various societies.

The authors' DEG-taxonomy utilizes some principles of WARD (1961, 1980), DERR (1973), and HOLMES (1981) in order to 1) establish a conceptually organized and justified instrument; 2) aid educational theoreticians *and* practitioners in formulating meaningful objectives; 3) provide educational planners and researchers with key concepts; and 4) initiate a defensible knowledge base for DEG.

2.2 The Classification of DEG-Concepts

The first attempt to classify concepts linked with DEG was made by JELLEN & WHITE (1980) who designed a summative matrix composed of fifty concepts contained within seven clusters. This matrix portrays the prevailing DEG-

Table 1: A Classification System of Relevant Factors, Theoretical Positions, Subsequent Key Concepts and Recommended Practices for DEG

JELLEN'S TAXONOMY[1] FOR DEG[2] (3rd Edition, 1984): A CLASSIFICATION SYSTEM OF RELEVANT FACTORS, THEORETICAL POSITIONS, SUBSEQUENT KEY CONCEPTS & RECOMMENDED PRACTICES FOR DEG.

RELEVANT FACTORS	THEORETICAL POSITIONS	SUBSEQUENT KEY CONCEPTS	RECOMMENDED PRACTICES
I The Nature of the Gifted Learner	I Considering Gifted Mind on the Whole ► A Cognitive Ability B Affective Ability C Conative Ability	I Within the Framework of a Multi-faceted Mental Construct ► A 1 Intelligence 2 Imagination B 1 Empathy 2 Sensitivity C 1 Interest 2 Motivation	I Early and Valid Selection/Identification Procedures A 1 Culture-fair, individualized IQ-batteries, humor scales, & standardized scholastic achievement tests 2 Student projects & auditions ► B 1 Values inventories 2 Attitudinal scales C 1 Interest inventories & motivational scales 2 Nominational devices
II The Role of the DEG-Educational	II Considering the Trained Professional as A Teacher B Facilitator ► C Counselor	II Within the Framework of a Differential Pedagogy A 1 Acceleration 2 Differentiation ► B 1 Enrichment 2 Leadership Training C 1 Characterology 2 Mental Testing 3 Restructuring	II Academic, Personal, and Social Development A 1 Transmission and acceleration of abstract content 2 Application of differential contents, methods, and evaluations ► B 1 Facilitation of parental and communal resources 2 Implementation and supervision of mentorships, internships and/or tutorials C 1 Development of a DEG-characterology 2 Interpretation of mental tests 3 Interpretation and application of DEG-personalyses
III The Demands of Knowledge	III Considering Generativity in A All Content Areas B Methodology C Assessment Techniques ►	III Within the Frameworks of Differentiation & Articulation A 1 Ethics } Curricular Core 2 Synnoetics 3 Synoptics 4 Empirics } Curricular Electives 5 Esthetics ► 6 Symbolics B 1 Discovery Approach 2 Games/Play Approach 3 Interest Approach 4 Polytechnical Approach 5 Problem Approach 6 Systems Approach C 1 Achievement 2 Evaluation 3 Observation	III Knowledge Production in All Fields of Knowledge A 1-6 Emphasis on conceptual and ideational studies in all realms of meaning, i.e., for the curricular core (1-3) and for the curricular electives (4-6) B 1-6 ► Emphasis on "educere" or learning how to learn, to question, to apply, and to produce knowledge responsibly, cooperatively, and independently C 1-3 Emphasis on an achievement-oriented climate in the DEG setting that must affect not only the students but also the teachers and the community at large
IV The Needs of Society	IV Considering the Constitutionality of a Given Society A Human Rights B Human Obligations ►	IV Within the Framework of a Free Society A 1 Democracy 2 Equality B 1 Responsibility ► 2 Responsiveness	IV The Reproduction or Reconstruction of a Procedural Democracy A 1 Procedural democracy as a means to safeguard against elitist or utilitarian stratification, isolation, insulation, and/or exploitation of gifted youth ► 2 Procedural democracy as a means to accept or reject all forms of authority that hinder or advance all forms of equality B 1 Procedural democracy as a means to display socially responsible behavior in and out of school 2 Procedural democracy as a means to get involved in school or communal projects

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1) Jellen's Taxonomy for DEG is an attempt to bring a knowledge base and a conceptual order to the atheoretical nature of so-called "Gifted/Talented" or "Creative Education."

2) DEG or "Differential Education for the Gifted" is a term and acronym adopted from Virgil S. Ward (1961) to replace the illogical and semantic fallacy of so-called "Gifted/Talented" or "Creative Education."

3) Phenix's (1964) "Realms of Meaning" have been adopted as curricular foundation for DEG.

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jargon found in current writings on DEG. To taxonomize DEG, however, a *hierarchical* arrangement of these clusters was needed along with the recognition of significant DEG-concepts. Since JELLEN & WHITE did not establish theoretical positions necessary to legitimize their clusters of DEG-concepts, JELLEN (1981), in his doctoral dissertation under WARD, introduced theory to a new scheme of thirty-two key concepts that are justifiably within the domain of DEG.

These thirty-two concepts have been ranked by four factors to be considered when constructing curricular theory (HOLMES, 1981). Subsequent theoretical positions and recommended practices for DEG support each one of these four factors. The result is a classification system that arranges and classifies objectives for DEG into significant categories with thirty-two key concepts. This *Taxonomy for DEG* results in a clear, ordered, economical, significant, and conceptually justifiable definition of so-called 'gifted education'.

2.3 Toward a DEG-Taxonomy

The development of the taxonomy occurred in four stages, each necessary to add meaning to DEG.

(1) Stage One

The recognition of 'Relevant Factors' required for the design of a curricular theory took place in the first stage. The four factors reflect theoretically acceptable presuppositions concerning curricular theory as found in the works of PETERS (1966), BERNSTEIN (1973), MOORE (1974), WARD (1980) and HOLMES (1981). These four factors separate and order DEG into four major areas: (I) the nature of the gifted learner, (II) the role of the DEG-educationist, (III) the demands of knowledge, and (IV) the needs of society.

(2) Stage Two

The four previous factors determined the 'Theoretical Positions' compatible with investigations in concept theory (MOORE, 1974); psychometrics (EYSENCK, 1979); pedagogy (ETERS, 1966); epistemology (PHENIX, 1964); and sociology (BERNSTEIN, 1973). An important part of this stage was to generate theoretical rationales as guidelines for the organization and conceptualization of information within the remaining categories.

(3) Stage Three

These theoretical positions caused the emergence of thirty-two 'Subsequent Key Concepts'. Each key concept is supported by educational research with particular reference to DEG in the psychological, pedagogical, epistemological, and sociological foundations of education.

(4) Stage Four

Logical inferences of the previous categories and concepts led to 'Recommended Practices'. The taxonomy was examined for consistency and reliability by comparing its theory with WARD's (1980) earlier axioms.

An exact classification of meaningful terminology is necessary for significant empirical research to take place. The progress of research in DEG depends upon such a justifiable classification system. To date, there is no such conceptualization of DEG. Subsequently, there has been very little meaningful research in the theory and practice of DEG since WARD's original curricular foundation formulated some twenty years ago (JELLEN, 1985).

2.4 A Description of the Four-Factor-Foundation for DEG

The four factors in the DEG-taxonomy were adopted from the curricular framework prescribed by HOLMES (1981). The most important characteristics of the taxonomy can, therefore, be described in the following terms (JELLEN & VERDUIN, 1986):

Factor One: The Nature of the Gifted Learner

Giftedness is described in terms of a psychological construct in which all mental capabilites add to the multi-faceted nature of a gifted mind encompassing cognitive, affective, *and* conative abilities. The assessment techniques for identifying the gifted must, therefore, reflect a multi-faceted approach based upon giftedness on the whole. Six key concepts, found in the cognitive, affective, and conative domains, contribute to the selection of valid and reliable psychometric devices necessary for an early and culturally non-biased identification procedure. With the exception of peer nomination, other nominational instruments are the least advised and most subjective.

Factor Two: The Role of the DEG-Educationist

To teach, counsel, and facilitate gifted learners are difficult undertakings. Those responsible for these professional roles must be carefully chosen and prepared. The assurance of the gifted learner's academic personal, *and* social development will be guaranteed if early vocational acceleration in specific subjects is replaced by a general but qualitatively differentiated curriculum that satisfies "the canons of intellectual challenge, socio-emotional stability, and moral responsibility" (Jellen & Verduin, 1986). Unfortunately, these educational objectives have become a secondary concern in the U.S. and abroad. The exploitation of gifted youth for utilitarian purposes is seen as the dominating rule and not the exception in curricular planning for the gifted (Jellen & Verduin, 1986). In light of this, the role of the DEG-educationist is to take advantage of educational opportunities that facilitate the *holistic* development of the gifted learner - both in *and* out of school. This sort of professionalism demands from the DEG educationist that he/she overcome the traditionally designated role of a classroom instructor or aptitudinal trainer. Early role-modeling can be facilitated by the use of mentorships, internships, and/or tutorials with other gifted people. As shown by the three key concepts under this factor, the role of the DEG-educationist is to provide the gifted with a vision and mission for responsible as well as responsive knowledge production in *all* areas of knowledge.

Factor Three: The Demands of Knowledge

This third factor is fundamentally different from curricular thinking in most western nations dominated primarily by the transmission, consumption, and regurgitation of factual knowledge. The theoretical position of 'generativity' calls for differentiation and articulation in all content areas, methods, and evaluation techniques. A qualitatively differential DEG-core must promote critical, speculative, and innovative thinking in ethics (moral knowldge and ability), synnoetics (personal/social knowledge and ability), and synoptics (philosophic-historical knowledge and ability). More altruistic, cooperative, and responsive-responsible behaviors are perceived results of such a curricular core.

A similar approach should be taken by offering a wide range of curricular electives found within empirics (scientific knowledge and ability), esthetics (artistic knowledge and ability), and symbolics (communicative knowledge and ability). These electives foster the gifted learner's particular aptitudes and interests with focus on learning how to learn, to question, to apply, and to produce new ideas, hypotheses, and concepts.

The conceivable outcomes of the six pedagogical approaches listed in the taxonomy include the reinforcement of problem- solving techniques, the pursuit of newly activated interests, the development of practical new skills, the linkage between structures and functions in all kinds of knowledge, and the enjoyment of learning through the use of student-designed materials. This methodology has the greatest potential to evoke knowledge production as the sign and proof of giftedness.

Achievement, evaluation, and observation apply not only to the gifted learner, but also to the DEG-educationist and the DEG-program. In a DEG-community, the DEG-scene should be a center for experimentation, exploration, and innovation. Performance by way of DEG signifies accomplishments in academic, personal, and social terms. These accomplishments not only contribute to the gifted learner, but benefit the DEG-educationist, the DEG-community, and the society on the whole.

Factor Four: The Needs of Society

For meaningful progress to take place, responsive-responsible knowledge production is needed in all societies. The explosions of knowledge, population, and public expectations, occuring in an ever-changing world, reinforce this need. Consequently, DEG is a way to initiate, investigate, estimate, evaluate, and accomodate change. The ideologies of elitism and politically-motivated stratification of the gifted are counterbalanced by the more pragmatic and reconstrutionist role for DEG. The gifted learner is, therefore, systematically introduced to qualitatively differential didactics that supplement and enrich the contents of the regular educational program. Maximum participation is ensured by rotation of DEG-students and staff.

In a free and democratic society, the academic, personal, and social objectives of the DEG can only be achieved through liberal, democratic, and progressive values since they have the greatest potential to trigger knowledge production in all fields of knowledge.

3. The Justification for DEG in a Procedural Democracy

Liberal, democratic, and progressive qualities in a procedural democracy are closely linked with the realization of (I) psychological, (II) pedagogical, (III) epistemological, and (IV) sociological justifications for DEG.

3.1 The Psychological Justifications for DEG

Many gifted students, despite their superior intellectual and educable potential, reveal an early nature quite different from what is expected. 'Educational retardation' of the gifted is often the product of mediocre academic programs and poor social adjustment resulting from attendance in 'regular' schools.

Newland (1976) states:

> "Many of them tend to perform noticeably below their individual capabilities, with an attendant failure of self-fulfillment and ultimate social loss. . . (This) calls for preventative efforts on the part of the schools and an understanding of this condition by parents" (p. 111).

Psychological research by Hollingworth (1936) warns us about the maladjusted gifted learner whose

> "Academic, personal, and social maladjustments . . . may lead to complete alienation from (the gifted child's) contemporaries in childhood, and to misanthropy in adolescence and adulthood. Particularly deplorable are the struggles of these children against dull or otherwise unworthy adults in authority. The very gifted child or adolescent, perceiving the illogical conduct of those in charge of his affairs, may turn rebellious against all authority and fall into a condition of negative suggestibility – a most unfortunate trend of personality, since the person is then unable to take a cooperative attitude toward authority (pp. 277-278)."

A cooperative attitude is essential in the context of a procedural democracy. Subsequently, the psychological justifications for DEG are founded upon meaningful developmental experiences that must lead to satisfactory academic, personal, and social adjustment of the gifted.

3.2 The Pedagogical Justifications for DEG

Most contents, methodologies, and assessment techniques designed for the general school population are not suitable for the gifted learner. Through DEG, the gifted teacher is given a chance to critically examine those didactics that are supposed to serve the specific developmental needs of the gifted. This rationale counterbalances so-called enrichment programs that accomodate student interests by ignoring the demands of knowledge for a holistic development of this group (JELLEN, 1985).

The pedagogical justifications for DEG depend largely upon the identification of gifted teachers in regular schools with a desire to fulfill their own profession and personal needs by interacting with these 'intellectual peers' in a manner stressing academic excellence and social cooperation. There is great need for this type of mutual commitment toward excellence and cooperation in the context of DEG. In order to find acceptance and support in egalitarian school, DEG-pedagogy must, therefore, continuously prove itself as an exemplary model of democratic process and academic achievement. These pedagogical and catalytic objectives are not only fundamentals for the survival of DEG in public schools but also essentials for the maintenance of academic standards as well as democratic values in democratic schools.

3.3 The Epistemological Justifications for DEG

Knowledge production (KP) in all 'realm of meaning' (PHENIX, 1964) and the sharing of KP are demands for standards of excellence that add credit and justification to existing DEG-programs. These goals necessitate a weak classification and framing of educational knowledge.

The *classification* of educational knowledge is achieved by establishing relationships between epistemological contents. The degree of insulation and differentiation between curricular contents determines how strong or how weak the classificatory framework actually is (Bernstein, 1973, p. 366). In Europe, most curricular theories are encyclopedic or essentialist. Both theories demand strong classificatory schemes by reinforcing boundary strength as the critical characteristic for the ensuing division of labor (Bernstein, 1973). The codification and stratification of curricula into 'academic' and 'vocational' areas are the result of strong classification. In the European Gymnasien, Lycees, and 'public' schools, educators are aware that their knowledge is 'pure' or 'academic' and not available to the general public. This type of knowledge is usually consigned to the elite pupils chosen to attend well insulated elitist institutions. The strong insulation of these academic programs results in conformity of class identity and social membership, which reproduces class, caste, or social elites (Bernstein) – the antithesis of a procedural democracy!

The *framing* of educational knowledge, on the other hand, refers to the degree of control teachers and students have in the pedagogical relationship (Bernstein, 1973, p. 366). The student's power and control in this relationship is reduced by strong framing. Strong framing increases the teacher's power and control over content selection, organization, and pacing. Student progress is excessively tested and exemplified by "factual regurgitation of subject matter" (Bernstein, p. 367). Most European academicessively tested and exemplified by "factual regurgitation of subject matter" (Bernstein, p. 367). Most European academic schools are typical cases of *strong* classification and framing.

In the context of a procedural democracy, the epistemological foundation of DEG is justified by a *weak* classification and framing of the didactics involved allowing for maximum flexibility and feedback of teachers and students. These axioms allow access to all forms of knowledge, methods, and evaluations. Additionally, weak classification and framing of content encourage open communication: 1) among teachers, 2) among students, 3) between teachers and students, and 4) within the community. To formulate a justifiable DEG-curriculum, the focus must be on the collective nature of learning how to learn and how to produce useful types of knowledge in *all* 'realms of meaning' (Phenix, 1964). This design will affect the entire didactical scheme and evaluation procedures associated with DEG. These weak regulating principles guarantee feedback and cooperation by all parties involved in DEG, affecting not only gifted students, but also DEG-educationists, and the community at large. Generative knowledge production becomes, therefore, a "cooperative and egalitarian effort" through DEG (Bernstein, 1973, p. 386).

In order to prevent stratification, exploitation, or isolation of gifted learners, weak classification and framing of educational knowledge become justifiable imperatives for DEG in a procedural democracy.

3.4 The Sociological Justifications for DEG

Procedural democracy is a demand for methods to consult its citizenry about the steps to be taken for the approval or resistance of authoritative policy and action (Peters, 1966, p. 295). These procedures are based upon the weak classification and framing of democratic principles.

As an example of a procedural democracy, the U.S. Constitution has established a system of checks and balances designed to protect the rights of *all* citizens. The fundamental rights of liberty, justice, equality, and mutual respect are found in this system within the various amendments. A procedural democracy in action attempts to settle disputes by reasonable discussion as opposed to force, arbitrary fiat, ideology, or belief (Peters, 1966, p. 299).

Within this civilized legal framework of human rights and human obligations, *and* qualified gifted students, regardless of race, color, religion, sex, or national origin should be able to participate in DEG. The democratization of DEG-knowledge requires a consideration of majority as well as minority interests. Subsequently, DEG must establish democratic policies where the citizenry is invited to formulate, and to evaluate DEG-objectives as well as DEG-outcomes. Such justifiable democratization of DEG calls for position rotation, an accountability system, a public relations network, a center for information distribution, and a culture-fair identification plan for the most promising students and teachers form the entire community. With these sociological justifications in mind, DEG serves as a democratic model that trains its participants in rational discourse, problem-solving, information follow, and in the democratic procedures of petition or campaign. Thus, DEG becomes a model training ground for democratic leadership.

The democratic student-leadership role, prompted by DEG, should encounter few objections since the development of a rational, competent, problem-solving, cooperative, and civic-minded student is *not* an elitist idea. However, these civil characteristics are not inherent, but become the results of an articulated ethics as well as civics program within DEG. The potential of DEG to train these types of leaders with character, vision, and mission is founded upon the nature of the gifted mind which operates on high degrees of rational, humanistic, and moral thought (Newland, 1976). Both authors firmly believe in the necessity for this type of character-building through DEG in the contexts of pragmatic, egalitarian, and democratic principles that lend sociological justification to DEG in a procedural democracy.

Summary

The purpose of this paper is two-fold: 1) it establishes the meaning of Differential Education for the Gifted (DEG) by ways of a taxonomical base; and 2) it

supports DEG within the context of a procedural democracy. These tasks are undertaken by the support of a conceptually firm taxonomical knowledge base composed of 32 key concepts designed to counterbalance current 'gifted' educational programs which often lack a stable conceptual foundation. Further, the authors want to persuade those educators who oppose or dispute qualitatively differential didactics for gifted youth on the basis of elitist or undemocratic notions.

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CHAPTER IX

Competition System for Gifted Children in Hungary

András Pék

1. Historical View

We have been concerned in Hungary with the early identification and motivation of talented and gifted children for decades. We have a long tradition in sports, in music education (the so-called KODÁLY method, to mention only one) and in mathematics. There has been a mathematics competition for high school students since early in this century. This voluntary competition is organized by *Matematikai Lapok a gimnazisták számára,* a monthly magazine. They publish the results to mathematical questions and problems. Students can send their written solutions to the publisher. Every month they are evaluated and scored by independent mathematicians and the results are published. Thus, everyone can find out where they stand in the competition, or how many points they have. The magazine belongs to the *Bolyai Matematikai Társulat,* the union of well-known mathematicians in Hungary.

Another tradition has also survived, although its functions and methods have changed. Many teachers, especially those in the villages, see it as their duty to support the gifted and talented children from the lower classes (the children of blue-collar workers and farmers). This support includes some financial support for developing their talents. However, this only occurs occasionally, is voluntary and cannot be implemented systematically. So the problem of motivating and rewarding gifted children of all social classes remains unsolved.

After the Second World War, a uniform school system was introduced in Hungary. Grades one to eight are included in a general primary school; the 14 to 18 year-olds attend either a *Gymnasium* or *Fachmittelschule/Realschule,* both ending with equivalent diplomas (Abitur) or the option of a three year *Vocational School* exists for 15 to 17 year-olds.

Many varied out-of-school activities (voluntary) are available for the students of all three schools. These voluntary student activities include all school subjects, school study organizations, sporting and cultural events; almost everything students can and want to do with their free time. There are, of course, differences between the schools in what they are able to offer based on their objective limitations and personnel (trained areas). The possibilities are much greater in the cities; on the other hand, the teachers in the villages are often able to be more intensely involved with individual students.

This school development caused not only a unified general school structure in the Gymnasium but also an inner differentiation. The best students in each subject were put together in special classes, such as mathematics, chemistry, physics and foreign languages. The students can devote more time to their specific subject. Aside from the music and sport schools, there are no special schools in Hungary such as a mathematics school; there is only one ballet school and one art school.

2. Methods of Identifying Gifted Students

There was no empirical method of choosing the students for the special classes. The schools themselves selected the students. Essentially, only one selection method was widely used, the children with the best grades were allowed to attend the Gymnasium and the special classes. The teachers were against the use of an admissions test. Two important problems remained unsolved:

1) Where and how should the children be selected for the special classes?
2) How are the choice of future career and promotion of highly gifted and talented children connected to the selection for the special classes?

At 14 years of age, the children are faced with an important decision: Which type of school do they want to attend? This can allow them to develop their talent and match their career preferences. The question then arises: What possibilites exist to discover, become acquainted with and to develop their interests? Both of these unanswered questions made new initiatives necessary.

It is well known that there are many sporting competitions; individual and team sports, school, regional and state competitions, etc. The free-time cultural events, choirs, music ensembles, theater groups and folklore groups also organize parties, meetings, and competitions. Without going into great detail about industrial and agricultural work competition systems in socialist countries, I will say that during the sixties, sociologically and psychologically speaking, there was generally a cultural awareness which allowed the development of a school competition system. It seemed to make sense educationally to introduce a competition system in Hungary based on the school structure. This competition system was supposed to lead to the early identification of gifted students through the use of a diverse program which would be of interest to both parents and children. It also - and this is especially important - offers orientation in school and career selection.

Twenty years ago, in 1965, at my initiative and partly under my organization, school competitions began in all school activities for 10 to 14 year-old students. This included not only sports and music, but all school subjects and leisure activities. After three years, the system spread to all types of schools (Gymnasium, Realschule and Vocational School); a slightly modified version exists today.

The competition system includes all school areas - i.e. includes mathematics, physics, chemistry, biology, geography, history, native language and literature (Hungarian), foreign languages, technical knowledge and abilities. From the age of 10 to 14 years, Russian is learned; from 15-18, German, English, French, Spanish and Italian are taught in addition. In the *Fachmittelschulen* and *Vocational Schools*, the areas range from simple handwork to computer programming or special talents in many varied yet specific fields.

How do the competitions proceed? Everything begins in the classroom and in the school study groups. The topics of all competions are published at the beginning of the year. In addition, the students are informed about the conditions and prerequisites. We have observed each year that this system allows teachers to identify their most gifted students at the beginning of the school year in September. They are then able to give appropriate support and help to these students. The methods used for encouraging the development of talent in the school are very important. Proven methods (based on empirical studies) have been systematically collected and published. We now know that these methods have to be scientifically analysed. I believe it would make sense to create a research institute for this work. In the past research has been concentrated on subject-specific achievement tests.

In the general schools, competitions are only held if enough participants can be found. The schools organize their own competitions; each school has the right to send three students to the higher competitions. At the district and regional level, the children can again try to prove their abilities in the various areas.

Finally, a total of three students from each of 19 regions and six students from the capital (63 altogether), compete at the national level; comparing their giftedness and achievements. The competitions at each level consist of written tests and oral problem solving. In the areas where this is important, practical examinations (e.g. chemistry experiments) are held. The competitions in the different types of high schools are similar for the 14 to 18 year-olds, with the written examinations, (such as the essays composed by the students, the search for literature sources and evaluation) playing an increasingly important role. The practical solutions become increasingly important for the students in the vocational schools.

The out-of-school competitions are constructed very similarly at all levels. In addition, there are many cultural organizations and endowments who also contribute, however unsystematically, to the support of gifted students.

The elementary school children, third and fourth graders, also compete in game situations. This competition advances at most to the city or district level.

In my opinion, it is very important, despite the well-organized macrosystem in which these competitions take place, for the individual person to find his/her own place, to show his/her possibilities, interests, talents and abilities and to be able to develop them. There are opportunities for everyone in Hungary to test themselves in something: sports, music, art, technology, hobbies – the students choose for themselves. Another question is, what can the students do with this opportunity? This is dependent on the support received by and the methods used on the gifted students.

First a look at what the numbers show us. Almost every child participates every year in some area of competition. The majority of the children try in more than one area; they test their strengths and talents. This is possible because all of the children have a right, independent of their grades in each subject, to participate every year in two school subjects and in the competition for out-of-school activities; crafts, art, music, sports, etc. Approximately 40 percent of the students participate in the school subjects each year, 70 percent in sports, in technical competitions 35 percent, in cultural events 65–66 percent. These numbers are based on the school competitions. This reflects an average participation from each child in two areas each year. The children also have a right to compete in the same or another subject area the following year. Even if we only look at four years, from the 5th to the 8th grade, we see that all of the children have a chance to compete at least once in each subject. In addition they can compete in as many of the out-of-school subject events as they want. All children seem to have equal rights or chances in this system. However, it is already well known, how this intention can be limited or handicapped. Backgrounds are often a handicap. Teachers are often prejudiced in whom and what they consider to be talented or gifted. The students are less often judged by teachers on their capacity or ability to do something but rather on their achievement level. Achievement level is of course very important and is also a reason for good evaluations in competitions. It does not however, include everything that gifted students have to offer. It plays an important role in the discovery of talented children but is not the only factor which should be considered.

An important question is how the system actually functions and what methods are appropriate? The children are encouraged by teachers and to some extent by parents. It is especially the teachers in each subject, the home room teachers and study group leaders who encourage the students to participate and to achieve. The children are allowed to prepare and train for several months. During this process, the teachers can help with personal motivation and support, but they offer the most help through their observations and individual programs. This preparatory phase is aimed at the children as a whole, but the individual also receives attention and support. The competions follow. Some children have good and many children have not such good results. The best can move on to the competitions at higher levels. The competition is more challenging at each level, and they must therefore be prepared to give more. The preparation is always promoted by the teachers. And so we return again to the teachers. If we use this system, i.e. to examine the majority of the children to find the really talented, we have to rely on the teachers.

The teachers' support of the competitors is very important at the first level, that is in the grade-level and school competitions; it is not, however, always intensive enough. The students' success rewards the teacher and he/she also receives professional recognition. Thus, the teachers are also interested in the competitions and in the results. This double motivation works to the advantage of the system.

3. Chances and Difficulties

The student competition system has been judged many times to be a success at building in motivation into the system. The school career is very important for the children. One could actually say that it plays a role in the mobilization of the society. So it is important which direction the student chooses after completion of the eighth grade. There are several possibilities: the *Gymnasium* and the special classes there, the *Fachmittelschule* or a *Vocational School*. The prizes that can be won in the competitions increase in value at each level. For example, the six eighth graders (14 year-olds) who place the highest in the county-wide competitions have the right to choose what school they will attend (i.e. the college preparatory schools). In the upper levels of competition, the motivation is increased even more. Earlier, only school grades were considered in the selection of students for the special classes, and now every child has the right to compete independent of their grades. So we see that many students have the chance to improve and choose their school situation. This change also led to changes in the Gymnasiums; they are more willing to take students who not only placed among the first six but all who reached the district level.

Further prizes range from free participation in a summer camp for specific subjects and attending an international summer camp, to many gifts from various companies and institutions, such as radios, cameras, books, and certificates.

The ten *Gymnasium* and *Fachmittelschule* students who place at the national level are able to enroll at the university in that subject without entrance examinations. This is a very motivating prize. Every year, only every third Gymnasium graduate is admitted to the university or other institutes of higher education. The *Vocational School* students are allowed to graduate a half year earlier if they do well in the competitions. The team selection for the 'school olympics' and other competitions are also made in this way.

One can say with great probability that the children who participate in the competitions and do especially well are the most gifted. They are therefore better able to develop their talent.

3.1 Problematic Elements of the Competition System

There are always several problematic moments in a competition system. What happens to the students who do not make it to the higher competition levels? How are they compensated? First, they have the right to try again the following year. They also have the possibility to continue trying to improve themselves in their study groups, to develop other areas. They have the right to choose new study groups, new subject areas or develop other interests. This means that they have the right to begin anew and have enough time to become better acquainted with their abilities. They receive help and support in the school if they want it.

Here again, there are unsolved problems. This is an educational-developmental psychology problem - can the children and at what level can they live with their rights? Not even the talented can always live with this. They, too, need support in this.

Another method which is highly recommended (and that is an optimal educational approach), is that the students are positively evaluated in the classroom regardless of their level of success. Alone the trial of one's talents should be reinforced as a positive personality characteristic. If this occurs, one can assume that little frustration will take place. I have to mention at this point that the reality does not look as positive as reported here. There are many problems that need to be solved for the system to function at its best.

3.2 Typical Life Histories of Former Competitors

The only biographical information we have available is on the gifted children who competed in mathematics. In the last 20 years, we have met with 1,260 students from the ages of 10 to 14 years. Among these we find today professors, university teachers, mathematics teachers (more than 300), also members of the Hungarian Academy of Sciences, honorary doctors of several foreign universities (for example, Dr. Csaba LOVÁSZ), but also engineers, economists, medical specialists, etc. So one can see that many professions and sciences are represented. It is my opinion that it is important and correct that not all competitors who were found to be gifted in math became mathematicians, but rather were able to develop their talent for other fields. Do we have too many good mathematicians in Hungary? We certainly do not have too few, but on the other hand we need mathematically gifted people in other fields as well.

Summary

Five years after the competition system was introduced in Hungary, I wrote about some of my conclusions:

> *"An important educational and science policy is to find a solution, so that no talented and gifted children are lost, but rather that all students can work in areas appropriate to their intellectual and physical abilities. The selection of talent with reliable methods is not yet completely worked out..."*

Today we are in a somewhat better position. Achievement tests for specific subject areas have been developed and advanced not only in the competitive situation but also in the daily school situation. Today there is less prejudice against testing. The many tests which are used in this system can help identify the gifted student. Using the newest developments world-wide, we could reach almost all children. Naturally, even the increased used of the competition cannot solve all problems in the support of gifted children. A really complex support system is also important; this however should include other means and methods.

Hungary is trying to develop such a system. In 1984, a competitions announcement was made by the Ministry for Education and Culture: "Possibilities and methods for the advancement of gifted and talented students in the general schools in the out-of-school student activities." The response to the competition was surprising. A total of 380 answers were received by the evaluation committee, many of which were scientifically elaborate.

CHAPTER X

Talent Education in the Hungarian School Environment

Zoltán Báthory

1. Introduction

It is vitally important for the Hungarian society to provide chances for the talented to improve, to make good use of their exceptional abilities and creative powers, in order to benefit this society and for their own personal satisfaction. Experts from all walks of life agree that, due to the gradual increase in social demand for talented men and women, it is necessary to settle the matter of *talent education in the school* in a comprehensive manner.[1] Between 1980-1984 there were almost 300 publications which dealt with related themes such as ability, the development of aptitudes, talent cultivation, creativity, etc. This is adequate proof of the growing professional and public interest for talent education.

The experts also agree that talent is a general manifestation of personality not limited to intellect but involving as a whole and interacting with one another - other spheres of personality. This concept of talent eliminates earlier one-sidedness and is a suitable framework for educational efforts which offer a broad interpretation of talent. Today the concept of talent is used not only for the general and superior manifestation of giftedness (genius); it also includes various special skills and creative qualities. It is important to mention that this broad interpretation of talent coincides with society's need for talent as well.

The experts disagree, however, as to how talent education should be implemented. Some feel that it should be made the special task of a few outstanding schools (as has been the case in the past and more recently), while others think that the quality and effectiveness of the entire school system should be improved. This would create more favorable conditions for talent education in schools. The main dispute is whether the desired results could better be achieved with the concentration or with the equalization of resources. The issue is whether we should favor an elitist or a democratic approach. The traditional approach used in the Hungarian school system, especially in academic secondary schools offering pre-university education, particularly when considered together with our present economic difficulties, would seem to encourage an elitist approach. The present phase and perspectives of our social development - especially the broadening of social participation in all essential matter - point, however, towards a democratic approach. We are trying to find a pedagogical solution for a lasting arrangement of talent education in the school regarding the above-mentioned contradictory social-economic background. We will start our discussion with a brief historical survey.

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[1] In 1983, a group headed by the author of this article was set up in the National Institute of Education (Budapest) for working out this task. The concept of talent-education in the school was published in the periodical Career Guidance (Pályaválasztás) in June 1984.

2. Historical Trends in School Policy

The need for talent-scouting and nurturance of talent at the societal level has been the concern of bourgeois radicals and socialists in Hungary since the turn of the century. The Hungarian Association for Child Study was established in 1906 on the basis of reform pedagogy; throughout its functioning (until 1944) the professional issues of talent selection and talent care have been its major concern. Around the turn of the century, the famous Eötvös College,[2] was modeled after the Ecole Normal Superieure of Paris. Many leading cultural figures of our time were educated there and remember its pedagogical work with nostalgia. Some famous secondary schools and colleges of towns with longstanding traditions (e.g. Pápa, Sárospatak, Tata) also played an important part in the past and can be regarded as models for solution of present problems of talent education. Between the First and Second World Wars progressive intellectuals and populist writers started movements for discovering and educating the poor but gifted children of peasants. Despite these progressive initiatives, however, official educational policy served primarily the interests of the ruling elite and the middle-class, and increased their inherent advantages by establishing and maintaining good quality academic secondary schools.

After 1945, the problem of eliminating the massive educational backwardness of workers and peasants had to be faced. The establishment of the eight-grade General School, aimed at giving equal basic education to everybody, was a decisive event. It was also important from the viewpoint of talent education. On the basis of mass education organized according to democratic principles, a process has started in which 'talent education' replaced 'talent saving' as a central concern of educational efforts.

However, quantitative changes were not followed by qualitative transformations in the 1950s. What followed was that although the main condition for talent education in the school had been established by this organization of basic mass education, it seemed that educational policy in those years had come to a halt. The qualitative improvement of the General School was long neglected and in general little attention was paid to social inequalities. This had unfavorable effects on schooling.

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[2] The College was named after József Eötvös 1813-1871, a renowned writer and educational policy maker who created the system of Hungarian public education.

3. Research on Various Types of School Systems

The slow progress in the extension and generalization of secondary education which remains unsolved today has also been a significant problem. Together with other effects, this also weakens the school's position in talent education.[3] The findings in various studies show that secondary school *retentivity*[4] is probably the most important strategic factor from the viewpoint of the effectiveness of talent education in the school.

Since the mid-sixties, there have been regular investigations as to the effectiveness of different national school systems in the international educational research system IEA.[5] The dependent variable in these investigations is the *learning achievement* of selected student populations which are compared on various independent school system variables. In 1970, a survey was carried out in 19 countries on science education: The learning achievement of last year secondary school university-bound students was compared within the countries. The result of the analyses for each country showed that the average achievement of secondary school students is markedly influenced by the proportion of the given student population going to secondary schools which entitle them to study at a university. The larger the number of students attending secondary school, the lower their average learning achievement - at least as seen overall. But if we take the excellent students separately (e.g. the top 9 percent of school achievers, as in the study referred to here), and compare their average achievement from country to country, we find that the above-described correlation is reversed: *the greater the secondary school retentivity of a country, the better the achievement of outstanding pupils, as a tendency* (COMBER-KEEVES, 1973, pp. 173–177).

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[3] After graduation from the eight grade *General School* offering a basic education, students can choose among three different secondary school types: *academic* or *vocational* secondary schools and *trade* schools. The first two have four grades, end with a maturity exam and offer diplomas; the trade school has three grades and gives its students a skilled worker certificate. About one half of a generation can enroll in trade schools, less than one quarter in academic secondary and more than one quarter in vocational secondary schools. The main basis of higher education is the academic secondary school (for more information cf. the International Encyclopedia of Education, Pergamon Press, 1985).

[4] Retentivity in this case refers to the 'holding power' of a school system - it is the opposite of 'drop out'.

[5] *I*nternational Association for *E*valuation of Educational *A*chievement (IEA): an empirical comparative educational survey. The National Institute of Education (Budapest) has participated in studies initiated by IEA since 1968. In 1970-71, IEA conducted the so called Six Subject Survey (reading, science education, English and French as foreign languages, literature and civics); the Hungarian Institute participated in the first three.

In the case of 13 developed IEA countries, the rank-correlation coefficient (Spearman) between the size of retentivity and national averages was –.66, whereas the value of the rank-correlation coefficient between the size of retentivity and the national averages of excellent learners was .28. (The first value is statistically significant, the second is not.) The indirect correlation between the size of retentivity and the achievement of excellent learners on the other, support those who believe that – although the relatively few available findings confirm at best a tendency – the solid, reliable basis of talent education in the school should be sought in the *extension and democratization of secondary education and in the general improvement of mass education.*

Sport experts discovered the correspondence between retentivity and excellence long ago, and although sometimes elitism got the upper hand in sport movement, real lasting results and positive attitude could develop only on the basis of mass sport training.

This connection between retentivity and excellence is the main reason which makes me feel that those who – ceterum censeo – have no other suggestion for talent education than the resurrection of the old elite secondary academic schools and the establishment of new ones, rely on ideas which are rootless and factitious in today's Hungary.[6] The intention of 'saving' appears always in their arguments. They say that if the average school population declines (the direct consequence of mass education), then let us save at least the talented because only people with above-average talents can reverse the general trend of intellectual and moral deterioration.

The school systems of developed countries in the European sense, and especially those patterned after the Swedish comprehensive school, characteristically respond to the alternative of 'saving' versus educating by preferring education (that is mass education). The reason is obvious: The advanced societies have recovered from the state of poverty and they need not create special guarantees for the self-realization of their talented citizens; it is enough if they operate a school system which, albeit average, is open and accessible to all.

4. The Present Conflict in Hungary

Our interpretation of the irregularities and even conflicts of present talent education in Hungarian schools is as follows. They stem from the circumstance that although 'massive' forms of public education from kindergarten to secondary school have been established in the past 40 years, qualitative innovations have not been carried out sufficiently. As a consequence, it has produced many functional shortcomings including the compensation of disadvantaged and talented students as well. Most conspicuous in this context is the bottle-neck which characterizes secondary schools (academic and vocational secondary schools) preparing for higher education and consequently playing a decisive part in talent improvement. In addition, these pre-university schools are compartmentalized according to a selective logic, based on another more or less hidden structure of privilege versus backwardness. Consequently, secondary school education is continuously reproducing the stratification of the present Hungarian society. This state of transition from backwardness to development, and thus the obvious failings of schooling, are responsible – in our opinion – for the general preference of a philosophy where talented youngsters should be 'saved', and the general lack of popularity for the idea that talented young people need differential education.

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[6] This train of thought, for example, was very marked in the discussion initiated by the periodical Élet és Irodalom (Life and Literature) from May to September 1984.

Hence, we must now examine which phenomena offer possibilities for promoting the state of Hungarian public education and which developments point to an advanced state (at least in prospect). If we consider *differential education* as a realistic alternative – and this is what we would like to do – then we must begin with the entire educational system. Naturally we can only give a partial analysis here.

Perhaps we should start by recalling some findings of the above-mentioned IEA studies. In this international study, researchers attempted to demonstrate the correspondence between a country's degree of economic development and the productivity of its school system. The index of economic development was constructed in the usual manner of economic analyses while the productivity of the school system was assessed in a rather bold and pioneering manner, based on 10 year-olds' test results (i.e. General School pupils in the 4th and 5th grades) and those of 14 year-olds (i.e. General School 8th graders and 1st year students of academic secondary, vocational secondary or trade schools). The tests referred to achievements in reading and science. This means that the productivity of a school system was assessed using empirical data (Passow et al., 1976, pp. 19–20, 172–174).

It was found that, above a certain threshold of economic development, there is no demonstrable and interpretable relationship between the level of economic growth and the measured results of schooling. We note at the same time, however, that the relationship is very marked with respect to developed and developing countries – to the disadvantage of the latter. But in Hungary, it was possible to come to *two interesting conclusions*:

(1) Although Hungary was the last among the 13 developed countries participating in the study with respect to economic development (1970 figures),

the achievements of Hungarian students were actually very good. The ten year-olds were 9th on the list and the 14 year-olds were first.

(2)The improvement of achievements from 10 to 14 year-olds was almost unique to Hungary. Of the 13, only two other countries showed the same tendency and this to a lesser degree.

We would not like to be overly optimistic, but perhaps we may venture the statement that the Hungarian school system can compete in several aspects with school systems of advanced countries in the European sense, and that its lag is not substantial. It is a real 'transitory' system - as mentioned before - bearing the marks of both progress and backwardness.

If this diagnosis corresponds to reality, then we must recommend to schools and teachers concerned with talent education that they adopt in their schools primarily those methods which strengthen the position of progress of the entire school system. Unfortunately, we cannot say that the present organization and methods of teaching learning point directly to this. The system of special classes affecting about 10 percent of the General School pupils (6-14 year-olds) and the chief method of talent education applied by secondary schools (in reality by academic schools), i.e., the national interschool competitions, are both rather *contradictory.* And we may add, the techniques and methods which promote differential aptitudes and interests are much less known and less widespread.

4.1 School Competitions

For over two decades now, there have been regular annual national interschool competitions organized for the 3rd and 4th year students of secondary schools. The stake is very high because the best ten are exempted from the admission examination at the universities in the subject in which they placed well. And this is a serious advantage! No wonder a hidden contest has developed among secondary schools (over time) for the successful performance of their students in the competitions.

We analyzed in detail the results of the competitions from 1974 to 1983. We gave the teachers points inversely proportional to their students' placements (for each subject separately), then we totaled the points for each school.[7] The more points given to a teacher and a school, the more successful competitors they had managed to educate in the last ten years. With the help of this method, we showed that of the 539 secondary schools in the country in 1983, 220 schools scored some number of points, but *only 25 secondary schools had over 100 points.* Hence these schools can be considered outstandingly successful, at least from the viewpoint of competitions. We found that among these

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[7] For the first place 10 points were given, for the second 9 . . . the tenth 1.

'outstanding' schools, 22 were academic schools and 3 vocational secondary or mixed, 23 functioned in the capital or in some big town and 2 in small towns, and finally that all six training schools attached to universities were included in this group. These data support what was mentioned above about selectivity during secondary school.

4.2 Conclusions

For the moment, the findings of the survey led to *two conclusions*:

(1) The students of certain academic secondary schools regularly perform well in the competitions; hence it is very likely that factors such as the sociological situation of the school, the teachers' pedagogical skills, and the school's equipment are factors reinforcing each other. When they speak of school elitism, people think mostly of these schools.

(2) Some excellent teachers - practically regardless of the school's general level and sociological environment - manage to regularly train students with outstanding abilities and knowledge. This latter factor signals the extraordinary importance of the human factor within the pedagogical sphere, and indicates at the same time how one could democratize talent-education in the school and provide good education even in average conditions.

Competition and rivalry will certainly remain a major method of education, especially in the secondary school. The national interschool competitions are characteristically intellectual contests complemented by sport and art competitions. But, as everybody knows, competition often produces egoism and exaggerated individualism. Not all competitions promote cooperation. Many talented students are reticent and fear publicity; they fail to achieve in a competitive situation. Given these reasons, although competition is an important educational method, it cannot be considered the 'only' or 'main' method.

We should state explicitely that we regard *differential education* as the basic organization and methodical principle in school education. In our opinion, differentiation is the principle which can strengthen the positions of progress and which corresponds to all relevant pedagogical interests. Differentiation means, on the one hand, that we acknowledge the hereditary and social differences of students, and the macro- and microsocial differences of students, and inequalities of the schools themselves; and on the other hand, that we establish an educational practice (content, method, organization), which is able to adjust to the existing inequaltities with adaptive logic when necessary, by giving priorities or compensation. We think that, by starting from the principle of differentiation, it is possible to develop very flexible pedagogical activities that can be adapted to the various problems and inequalities. The concept of talent education proclaimed by the National Institute of Education has chosen differentiation (differential education) as the basic principle of talent education in school deliberately on the basis of these considerations.[8]

As we see it, the major difficulty of talent education relates to the size and the complexity of social and educational inequalities, and to the restrictedness of resources. But we do not believe – as I tried to prove here that these limitations allow only for one answer, the elitist approach, which would certainly increase differences. On the contrary, we think that a school and educational system with independence necessary to enable it to accomodate to inequalities in a differentiated manner could possibly provide solutions.

Summary

The paper starts with an operational definition of talent, and refers to the development and the constant difficulties of this concept as well. This is followed by a short introduction to the main trends of school policy concerning talent education in Hungary in the last eight decades. The historical theoretical frame of this issue is related to the controversy between 'saving' (that is, selecting and finding gifted children) and 'educating', which is still the underlying core problem of debates between representatives of 'school elitism' and those of the democratic approach to talent education.

Contemporary school policy, pertaining to the education of talented children in different school environments, is based on the principle of differentiation. This concept is widely accepted by teachers. At this point, the author tries to elaborate several educational and sociological factors influencing the process and the outcome of education.

Methods of education of talented children and youth make up the closing section of the paper. Emphasis is given to methods like special classes in General Schools and to different school and nation-wide competitions. Serious school differences occur in successful participation in nation-wide competitions – as was shown in a recent investigation. Some data and conclusions of this survey complete the paper.

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[8] See note 1.

CHAPTER XI

The First Information and Counseling Center for the Gifted in West Germany

Barbara Feger & Tania Prado

1. General Information

During the period from the turn of the century until the beginning of National Socialism considerable efforts were made in Germany to identify gifted students at the ages of about 6 through 14 years. The aim of the identification procedures was to find those students who would be able to take part in special programs for the gifted (cf. e.g. Moede, Piorkowski & Wolff, 1918). Since identification and programs were the central issues, information, counseling, and guidance of these gifted students played only a very marginal role. This is not surprising since the first German school psychologist did not take up his work until 1922 (Kirchhoff & Wiese, 1959, p. 487). At the very beginning of the era of National Socialism even the identification of giftedness on a more objective basis through psychometric procedures came to a stop.

After the war, Germany was divided into the western part, the Federal Republic of Germany, and the eastern part, the German Democratic Republic. The school systems of the two parts of Germany differ considerably, and their attempts at fostering gifted and talented children also differ.

Until recently, no systematic attempt was made in West Germany to offer help to gifted children in the case of problems caused by their very giftedness. Back in the seventies, Professor Wilhelm Wieczerkowski from the University of Hamburg set up a plan for a counseling and guidance center for gifted children and adolescents. In the fall of 1984, this plan became reality. The Federal Department of Education and Science funded the project for a period of three years. Even though the project started in October, the actual work could not start until January 1985 due to administrative problems of various kinds. Professor Wieczerkowski was the scientific director of the new center in Hamburg; the regular staff was rather limited, however. There was only one full-time position – that of the so-called director who did the work with the clients, answered letters, tested the children, talked to the press, and who even did part of the administrative work necessary – from buying stamps to keeping an eye on the supply of soft drinks for the children. The director, who happens to be the senior author of this paper, was assisted by a very experienced and efficient part-time secretary, whose working time was, however, only four hours per day. As will be shown later in this paper, there was an enormous demand for information and help. So in order to keep the center running, Professor Wieczerkowski offered his assistance in many ways. He payed a graduate student, Tania Prado, the second author of this paper, for twenty hours per week. She mainly did the interviews and tests with the younger children (up to about ten years of age), and Professor Wieczerkowski himself took over a considerable part of the interviews with the parents. Additional members of Professor Wieczerkowski's unit at the university also joined in, so within a rather short time the original members of the staff grew into a team of considerable size. Without the help of these volunteers, the center would probably have broken down in no time.

2. General Organization of the Center

In applying for the grant, the following functions were taken into consideration:

(1) Giving diagnostic information, counseling, and guidance to the parents and students in all educational and psychological problems associated with giftedness.
(2) Helping teachers with cases of learning and behavior difficulties of gifted children, planning differential treatment within the framework of the regular classroom.
(3) Giving information to parents in the northern part of Germany.
(4) Planning and carrying out seminars and courses for psychologists and teachers.
(5) Keeping in touch with and informing pediatricians and child guidance centers.

Of these aims only the first two could be realized during the first year of the project. Though there was a considerable demand for items 3 through 5, the number of gifted students turning to us for help was so great that these usually very urgent requests were taken care of first of all, and no time was left for the other items.

As far as counseling is concerned, one may distinguish three different aspects: 1) requests by phone, 2) letters, and 3) problems requiring direct counseling.

(1) Among the *phone calls* are the most casual as well as the most urgent requests. Many people find it most convenient to pick up the phone when they want to ask for a copy of our free brochure. On the other hand, people also use the phone in 'case of an emergency', e.g. when a gifted child has not been promoted to the next grade or when the teachers want to send a gifted child to a special school for children with severe behavior problems.

(2) In many of the *letters*, developments over longer periods are described. Quite often the people who wrote letters mention later that the sitting down, thinking the situation over, and writing down what had happened helped them quite a bit.

(3) Most important and most time-consuming are the *counseling situations in the center*. The kinds of clients, their problems, as well as some proposed solutions, will be described now.

3. The Counseling Situation

From the official opening of the center in February 1985 until the beginning of the World Conference in August 1985, more than 100 clients came to see us; by clients we mean those cases which require testing as well as extensive interviews.

As part of the procedure for obtaining information the parents are first asked to fill out questionnaires before an appointment is made. Usually the parent(s) - most frequently the mother - come(s) along with the student. While one of the psychologists talks to the student and administers the tests, another member of the staff talks to the parent(s). After the tests, a joint conversation with parent, child, and the involved staff-members usually takes place. The whole staff of the center meet once a week to discuss current problems. These meetings help them to arrive at a satisfying solution. Usually the parent(s) come back (for a second time); then the test results are presented and all further measures and steps are discussed.

3.1 Demographic Data of the Clients

Number of Clients: The data of 79 students will be presented here, 63 boys and 16 girls. Thus the boys outnumbered the girls by four to one. It has been stated quite often that giftedness is more or less equally distributed between the sexes (see MILES, 1965, p. 994; FEGER, 1977, p. 78). Consequently, this ratio means that gifted boys do have more problems and get into trouble more easily than gifted girls. The interviews with the parents and the children as well as the teacher opinions led us to assume (tentatively) the following reasons for this difference:

(1) There are still certain sex-role expectations; some parents consider success in school more important for boys than for girls; when problems arise they look for help sooner for their sons than for their daughters.

(2) Girls have a tendency to adjust more easily to social situations. They are more willing to compromise and to show self-denial.

(3) The girls were much more involved in extracurricular activities which definitely served as a compensation for the frustration in school. Activities in the arts were especially popular; many girls took piano and ballet lessons.

It is also interesting to note that a large proportion of the girls came because their teachers asked them to. Generally these girls did not have problems in school, but their teachers were not quite sure what to do with them and at the same time wanted to help them in their enormous desire for intellectual stimulation.

Age of the clients: The age distribution was as follows (cf. table 1). The peaks at ages 7 and 8 will be explained later.

Table 1: The clientele of the Counseling Center for the Gifted

Age in years	N
3	1
4	2
5	8
6	6
7	16
8	17
9	5
10	6
11	6
12	2
13	2
14	3
15	1
16	4

Socioeconomic status: Since only information about the parents' occupation was obtained, no definite information about SES can be given. Although there was a large number of professional parents, clients came from all economic and social groups; there were single mothers living on welfare, and there were unskilled workers.

Distance of clients' home from the counseling center: Most clients came from Hamburg and the immediate surrounding areas. There was a considerable number of clients, however, who had to travel quite a distance. More than ten clients came from the state of Northrhine-Westfalia. On the average they had to travel almost 500 kilometers.

3.2 Main Problems

The problem most frequently mentioned was that of boredom and underachievement, of progress in class which was too slow for them, of a total lack of challenge. The children in nursery school or their parents were apprehensive of the problem. Usually the parents made the children in nursery school look forward to school as a sort of paradise where all their questions would be answered and where they would be able to learn all they wanted to learn. School often turned out to be an enormous disappointment for these children. This accounts for the surprisingly large numbers of children in the age group of 7 and 8 years. In this context, it is important to know that there are virtually no nongraded schools in West Germany. The only measures possible for helping gifted children are advanced admission to school and grade-skipping. Both measures are not used very frequently.

Being forced to perform well below their potential often leads to learning and behavior problems with the older students. They show behaviors like withdrawal, aggression, total inability to concentrate, aversion toward school, dropping out of school, etc.

Forty-five students mentioned specifically that they felt that the demands in school were too low for them; 13 students were thinking of early admission to school or skipping a grade.

Further problems rather frequently mentioned are those of social isolation; quite a few students said that they felt envied by others, also that they did not feel understood or even accepted in schools and they felt pressure to conform.

Sixteen of the students had already consulted some other agency; about half of them were referred to us by that agency. All of the children expressed their disappointment about the kind of help they got from the other places.

Approximately ten of the clients did have problems which seemed to have other causes than giftedness. These problems included sibling-rivalry, frequent temper tantrums, lack of self-confidence, etc. These children could have been helped by any regular child-guidance clinic or by a school psychologist.

3.3 Methods of Identification of Giftedness

Seven children came who were mainly or exclusively interested in finding out whether they were gifted or not. Individual tests were administered in these cases, and it turned out that this group was unusual in certain ways. This is demonstrated by their intelligence test results. Even though their results are above average, only one of these children would have been considered gifted on the basis of intelligence test results. The distribution is as follows (cf. table 2).

This leads us to the question of how to identify students as gifted. Questionnaires are filled in by the parents beforehand. Parents and children are asked to

Table 2: Distribution of the IQ results

Sex	Age	IQ	Test administered
f	16	107	IST[1]
f	12	106	IST
f	10	135	HAWIK-R[2]
f	9	112	HAWIK-R
f	11	112	IST
m	11	115	IST
m	7	111	HAWIK-R

1 *Intelligenz-Struktur-Test* from AMTHAUER.
2 German version of WISC-R.

give as many details as possible on the background and development of the child. Further data are obtained through the interview with the parents - additional checklists and behavioral rating scales are filled in during the interview. The parents are encouraged to verbalize why they are making certain judgements about their children. During the interview with the children video recordings are made, so independent observers can later rate the behavior of the student. And finally the test is administered.

The total counseling procedure is carried out in any case, whether the child turned out to be gifted or not. In the case of obvious non-giftedness, we try to inform the parent of the strengths of the student.

3.4 Guidance for the Clients

Usually detailed suggestions are made for changing the situation. This ranges from helping the child to get into therapy and giving information on various extracurricular activities to talking with the teachers to make them more aware of the problems of gifted children.

In order to learn more about the effects of our advice, we contact the clients again half a year after the final session in the center. The first results are coming in now, detailed accounts must be given later. However, with many of the clients we keep in constant contact. So we have the first hints at the fact that we are certainly offering a service which is urgently needed.

4. Two Case Reports

Two case reports will serve to illustrate the kinds of problems some of the students are facing. We did not choose one of the very dramatic cases - a gifted child who has been transferred to a special school or one who attempted suicide.

Tim

Tim is a boy who is nine years old. Tim's mother came to see us (with Timmy) because the boy does not get along with his teacher. The situation is getting worse; Tim's aversion to his teacher (and the school) is getting quite strong. Tim is in fourth grade, and has about seven more months to go in this school before he will attend a secondary school, the 'Gymnasium'.

Development

Timmy showed an advanced mental development and well-coordinated motor activity when he was a few months old. He started playing the organ when he was three years old; he taught himself to read and write when he was four. When Timmy was three and a half years of age, his parents learned that Timmy was totally blind in one eye due to a retinal defect and that there would be no cure for his eye. When Timmy entered school his teacher was informed that his spatial vision was impaired, but she was not very considerate (e.g. calling him names when he acted clumsily at ball games). In spite of his handicap, Timmy is very good at other kinds of sports; e.g. he is at the top of his class in swimming.

Since Timmy was the only pupil in his class who was able to read fluently at school entrance, he was sent off to a separate room. Timmy could watch the other kids through a large window; he did not like his isolation and after a while he started clowning around behind the window. The teacher considered this a proof of the presence of behavior problems with Timmy. It was not until the beginning of third grade that the teacher realized how serious Timmy's eye condition was; she then acted surprised about the fact that Timmy's parents had not sent him to a special school for the handicapped.

The problem escalated when Timmy was excluded from a class trip. With this measure the teacher wanted to punish Timmy for pushing another boy on the escalator during the last class trip. Timmy insists that he did not do such a thing, the two kids just bumped into one another when the other boy stopped walking on the escalator. When Timmy's behavior was discussed in class, Timmy's teacher stated that Timmy was "not quite right in the head". She also insisted that she had lots of gifted kids in her class but that none of the others have the kind of behavior problems Timmy has.

The teacher

She is almost 60 years of age, unmarried, suffering from a slight handicap (limping) and she appears to be a rather rigid person. She has the unusual habit of holding 'gossip sessions' regularly when she asks the kids to complain about the other kids. Timmy's main complaint is that she treats him extremely unfairly, that she makes unfriendly or even hostile comments, and that she is always nagging him. He starts feeling insecure, he has only one male friend in *his class, and he prefers to associate with girls rather than with boys – at many a birthday party he is the only boy.*

The visit to the center

Timmy looks a bit older than he actually is. He also has an extremely mature way of using language. He writes little pieces of fiction and drama; his mother brought some samples along. Not only are the plots unusual and witty, but he also spells perfectly. Timmy also likes to paint, draw, and make sculptures. He has won various contests; in one of them he had to compete with students at the age of 16. He shows an unusual talent in music, composing is his favorite hobby; to earn a living he would like to become a composer. His math teacher mentioned recently that she considers Timmy gifted in mathematics. Nevertheless, other kids in his class get even better grades than he does.

Timmy also took a test – the HAWIK-R (revised version of the German WISC), his IQ turned out to be 142.

Tim has a magnificent memory and surprising knowledge in many fields. On several occasions Timmy has been able to point out mistakes his teacher has made; the teacher evidently considered this a personal insult and is trying to pay Timmy back.

Timmy's parents were provided with a list of items they are to discuss with Timmy's teacher; they were also advised to talk with the principal and with a member of the school board. The 'gossip sessions' of the teacher have been stopped in the meantime. The test results, as well as the other conclusions the psychologist arrived at, were quite a relief for Timmy and his parents. Timmy is much more self-confident now and acts much more independent. He is trying to stop lecturing in front of an indifferent audience; and he is going to take part in a program for the gifted. After very careful consideration, a secondary school was picked which will most likely meet Timmy's needs.

Christina

Christina's story is much shorter. Christina is 14 years of age. Early in childhood she revealed an excellent memory. When she went to elementary school her parents noticed that she started getting 'lazy' where 'higher mental processes' were concerned – relying very much on her memory which was successful most of the time. She also started spending a large amount of her time daydreaming.

In the Gymnasium (fifth grade and higher) she got acceptable grades in the beginning. As time progressed, she showed increasingly larger gaps in practically all subject matters. But even then her memory saved her from flunking out of school. In the sixth grade, Christina saw a psychologist who stated that she was gifted. When Christina came to see us, several teachers had realized that she was not able to take part in a regular class any more. Christina also *mentioned that she was unable to stop daydreaming. She could not concentrate on a task in school or on homework for more than ten minutes. One teacher remembered her as a fifth-grader - quick-witted in spite of her daydreaming, often presenting very original solutions etc., so he sent her to the center.*

In cooperation with a psychologist in Christina's home town, an intervention was planned. Using mainly behavior therapy, Christina learned to develop study strategies. This was not easy for either of them, Christina or the psychologist, but Christina is definitely making good progress in school.

5. Concluding Remarks

The descriptions of the two cases reflect one thing we often encountered. Many parents were disappointed with the schools their children were attending. However, many teachers emphasized that they in turn were disappointed with the parents of their gifted students. They viewed many parents as overambitious and narrow-minded. Quite often even short discussions with both parents and teachers provided a mutual understanding. Helping to promote this understanding by providing courses for the teachers and information for the parents is one of our most important goals.

During the first year of operation of the counseling center, we learned a lot about the specific needs and problems of gifted children in present day West Germany. However, another thing we learned may be even more important, and this concerns the qualification of the staff of such a counseling center. We came to the conclusion that these are the *essentials for people involved in counseling and guidance of gifted students:*

(1) Thorough knowledge of the literature on giftedness (only on this basis is it possible to make adequate suggestions to parents, teachers, and students).

(2) Thorough knowledge of the German school system. School matters fall into the legal code of the Federal states; there are small, but often important differences among the various states. It is important to be informed about the kinds of curricula in certain school systems in specific states, about the organization of schools and about the kinds of extracurricular activities, and about the consequences of actions advocated for a certain child.

(3) Actually part of this, but important enough to be mentioned separately, is a great familiarity with the legal aspects of school life. A good solution to a problem from a psychological point of view may not be possible because of the law in a certain state. This same solution may be possible in another state.

(4) Excellent knowledge of and contact with people and institutions related to matters of giftedness.

The scientific evaluation of a project like the present one is extremely important. For that reason all the members of the center - regular staff as well as volunteers - have decided to continue their work in Professor WIECZERKOWSKI's unit at the University of Hamburg.

Summary

This paper presents a report on the first information and counseling center for the gifted in West Germany. The aims of the center at the time the funds were applied for were 1) helping gifted students and their parents, 2) assisting teachers of gifted children, 3) spreading information to parents in the northern part of Germany, 4) organizing courses and seminars for teachers and psychologists on the topic of giftedness, 5) getting in touch and informing pediatricians and child guidance centers. Since no previous systematic experience with counseling gifted students during their school years could be drawn upon in West Germany, these intentions had to be rather tentative. The most frequent requests presented to the center are described.

The most time-consuming activites at the center concerned immediate counseling situations. First, some data on the clients are presented like age, sex-ratio, socioeconomic status, and the distance of the clients' homes from the counseling center. This is followed by a brief account of the main problems which were a) lack of challenge and inspiration in school, resulting in underachievement or behavior problems, and b) social isolation. The procedure of identifying giftedness is briefly described, followed by some information on our help and advice for the clients.

After the short presentation of two cases some concluding remarks, mainly concerning the required qualification of the staff of such a center, are added.

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CHAPTER XII

Are Highly Gifted Children and Adolescents Especially Susceptible to Anorexia Nervosa?

Marita Detzner & Martin H. Schmidt

1. Preliminary Remarks

Although today multi-dimensional methods of identifying the highly gifted are called for, these practical considerations have not yet found their way into psychiatric research. Rather, giftedness is considered to be the same as intelligence. The identification process which uses only convergent thought brings with it the danger of type II errors, however, it guarantees consistently valid and reliable selection (FEGER, 1980). The term highly intelligent will be used here for subjects whose intelligence test score are at least two standard deviations above the mean, which is equivalent to an intelligence quotient of at least 130.

2. Current State of Research

2.1 High Intelligence and Psychiatric Abnormalities

The relationship between intellectual capabilities and psychiatric morbidity risk is usually seen as a negative linear correlation. The common interpretation of this correlation is that high intelligence is coupled with more effective cognitive processing mechanisms representing a protective factor against the development of psychiatric disturbances in childhood. Figure 1 summarizes the results of child psychiatric epidemiological research on the rates of psychiatric disturbances dependent on intellectual performance (cf. ARTNER et al., 1984; SCHMIDT & WOERNER, n.d.; CORBETT, 1983; STONE, 1981).

At present no decision can be made on whether this monotone falling linear relationship shown above is also valid in extreme regions of high intelligence or if, above a certain threshold, the relationship can be more accurately described as a multi-dimensional relation framework including psycho-social factors (cf. SCHMIDT, 1984). The question of whether the highly gifted tend toward a particular symptomology because of their giftedness, i.e. whether there is a specific increased risk for this group, is also open. Such questions are difficult

In addition, therapists who work with anorectic patients, often complain about a certain 'stubbornness' which is not easily reconcilable with above-average intellectual abilities. GARFINKEL & GARNER (1982) analyzed this stubbornness more thoroughly and identified the following six disturbed thought patterns:

- *Selective Abstraction*
  This is understood to be a conclusion that is based on isolated details. For example, some patients believe that if they cannot control their eating habits, they will totally lose their self-control.
- *Overgeneralization*
  This means that rules from one situation are carried over to another situation. For example: "When I ate carbohydrates, I was fat, so now I should avoid them."
- *Magnification*
  Things or experiences are given additional meaning. For example, "A thin person is a good person."
- *Dichotomous Thought*
  This means thinking in extremes. For example, "Either I am thin (under 35 kg) or fat (over 65 kg)."
- *Personalizing*
  In this case, impersonal events are interpreted egocentrically. For example: "Two people are talking over there; they are talking about me."
- *Superstitious Thought*
  Cause-effect relations are constructed for non-contingent events (or for coincidences). For example: "If I like something, I lose it."

Hilde BRUCH (1978), one of the most prominent therapists in this area, has even postulated that anorectic patients do not reach the stage of formal operations according to PIAGET's theory of the development of intelligence. In addition, she asserted that anorectic patients more often make use of 'accommodation' and less often use 'assimilation'. The academic achievements of anorectic patients, explains BRUCH, come from excessive practice.

So it would seem that the connection mentioned at the beginning, between high intelligence and the probability of getting anorexia nervosa, needs further explanation. It is thus conjectured that only a certain subgroup of anorectic patients actually achieve highly in academic areas.

A further general problem is caused by the intelligence measurement. There are reasons to believe that the results of intelligence tests given during the first two weeks in the hospital lead to an underestimation of intellectual abilities. Neuroradiologists have shown a so-called reversible cerebral atrophy in the computer tomograph. This is due to weight loss and leads to deterioration of abilities to concentrate (KOHLMEYER et al., 1983). If one considers abilities to concentrate to be an aspect of intelligence, then this would indeed lead to an underestimation of the 'true' intelligence quotient. The following aspects were tested in the utilization study presented here:

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(1) Can a connection between the probability of certain psychiatric problems developing (i.e. anorexia nervosa) and high intelligence be proven in the area of child psychiatry?

(2) Can subgroups be found among the anorectic patients which can be clearly separated not only in their symptoms but also in their course of therapy?

3. Method and Results

3.1 Relationship Between Certain Child Psychiatric Illnesses and High Intelligence

First, a patient intelligence distribution was drawn up for the Child and Adolescent Psychiatric Clinic of the Central Institute in Mannheim for the years 1978-1984. This is shown in figure 2 as compared with the normal distribution.

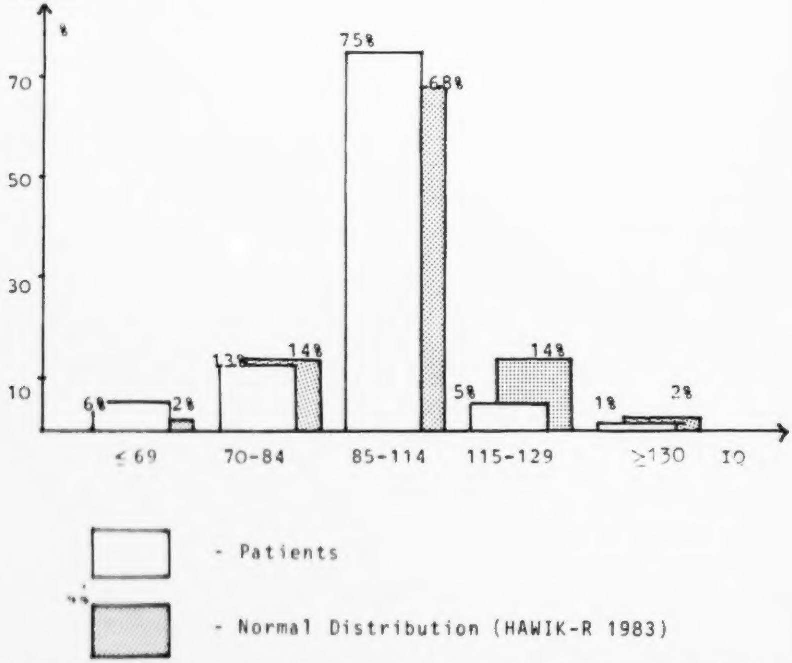

Figure 2: Intelligence distribution among patients from the Child and Adolescent Psychiatric Clinic (1978-1984) as compared with normal distribution

The highly intelligent make up 1% of the patients using the clinic. We do not want to go into an interpretation of the results at this point, but refer readers to earlier works (Schmidt, 1977; Schmidt, 1982). A control group was formed for the 55 highly intelligent patients. This control group consisted of normally intelligent subjects matched in age and sex with the highly intelligent group.

The two groups were compared using the chi-square method on the following variables (which were collected for both groups in the same manner):

- social status,
- discontinuation of treatment,
- success of treatment,
- psychiatric diagnosis,
- developmental delays,
- presence of psycho-social stressors,
- psychiatric illness in the family,
- broken home,
- upbringing style.

Only the results which were significant at the 5% level are presented in the following. The adjustment of significance levels was based on Holm (1979). Meaningful differences were only found with regard to diagnosis and style of upbringing. In the group of highly intelligent children, we only find half as many conduct disorders and a diagnosis of anorexia nervosa about ten times as often. The upbringing style of parents of highly intelligent children is typified by overprotection and shows distorted family communication patterns rather than lack of parental control and discord.

3.2 Regarding the Question of a Highly Intelligent Anorectic Subgroup

In order to examine this question, 55 consecutively treated inpatients, who had anorexia nervosa as defined by the criteria from Feighner et al. (1972; see also APA, 1980) were chosen for the random sample.

These criteria are:

- Onset before age 25.
- Weight loss of at least 25%.
- Intense fear of becoming obese.
- Refusal to maintain a body weight normal for age and height.
- Two of the following symptoms: bradycardia, amenorrhea, hyperactivity, lanugo hair development, binge eating, vomiting.
- No known physical or other psychiatric illness.

The data from the following areas was collected and analyzed:

- Symptoms (weight at admission, height, psychopathology, eating habits).
- Clinical findings (intelligence test, EEG and CT examinations, neurological examination).
- Course of therapy (discontinuation of treatment, weight curve, therapy success).

Further, the sample was divided into two subgroups according to the suggestions from Beumont et al. (1976) and Dally (1969). In one subgroup, only diet and exercise were used to reduce weight. This group will hereafter be called the 'restrictive dieters'. In the other group, the following methods are also used for weight control: stimulants, vomiting, and laxative abuse. This group will be called the 'bulimic group' (bulimic is used here for a symptom but not as a syndrom; we are thus following the description common in the literature although it is somewhat misleading, since the vomiting and not the eating binges characterize this group). Patients who tended toward compulsive personality were also assigned to the bulimic group.

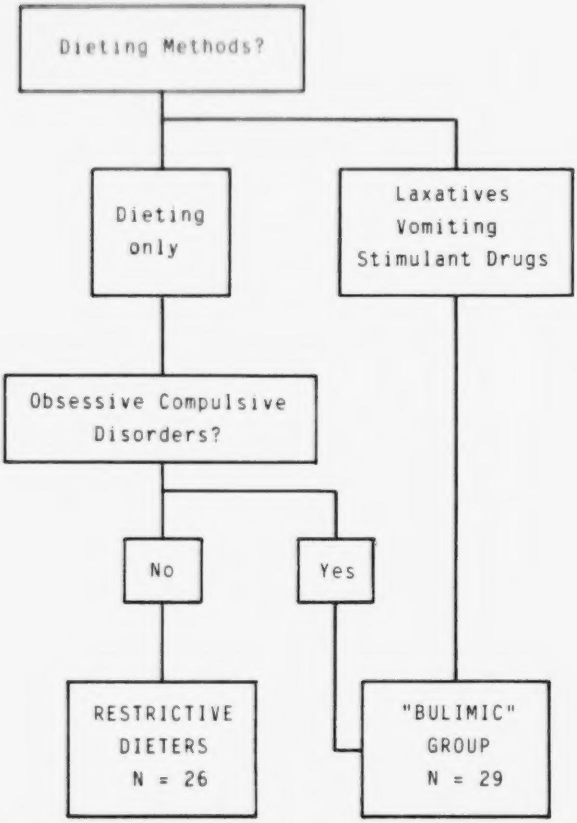

Figure 3: Assignment to the subgroups

In agreement with various other authors (cf. GARFINKEL et al., 1983; HOOD et al., 1983; CASPER et al. 1980), each of these two subgroups, the restrictive dieters and the bulimic group make up about half of the sample. There are more older patients in the bulimic group, they show more depressive symptoms and have been ill longer. This, too, corresponds to the findings in the literature. Longitudinal studies have shown that the bulimic symptomatology develops only when the illness is prolonged. Catamnestic studies have proven a higher chronic tendency in obsessive-compulsive patients (cf. ROLLINS & PIAZZA, 1981).

The differences in the intelligence level is important for our study. The mean IQ in the diet group was 120, whereas it was 110 in the bulimic group (test used: *Prüfsystem für Schul- und Bildungsberatung (PSB)* = Test for Determination of School Abilities from HORN). Highly intelligent girls (IQ greater than or equal to 130) who belonged to the bulimic group were either over 17 years or already suffered from anorexia nervosa for more than 18 months.

Since the per cent of those with test results of cerebral atrophy did not differ in the two subgroups, it cannot be assumed that the intelligence differences which were found stem from a systematic error. The differences in intelligence were found again in the type of school attended. Of the 15 girls who did not attend a *Gymnasium* (college prep high school), only 4 belonged to the diet group.

Further, there is a connection between the degree of weight loss and the intelligence, in the sense that the more intelligent girls in a certain age range (12-15 year olds) are particularly vulnerable to the development of anorexia nervosa. These girls are especially successful at controlling their weight with a restrictive diet (cf. also HOOD et al., 1982). Before we examine the implications this has for treatment, we would like briefly to describe our treatment procedures.

A target weight appropriate to her height is set for every girl accepted as an inpatient. During the first phase of therapy, hence called the weight gain phase, operant conditioning is used to bring about weight gain. In addition to a minimal weight gain, a maximal weight gain per week is determined (generally 500-700 grams per week), in order to avoid bulimic habits. After reaching the target weight, a four week 'maintenance' phase is begun, whereby the patient is generally given back the responsibility for her weight control. If the weight sinks below a certain tolerable level, the conditions of the weight gain phase are reinstated.

Individual therapy and family discussion generally accompany the operant therapy, in order to work on cognitive disorders, the basic conflict and symptom maintaining constellations.

In order to make the therapy progress visible, the weight, which was generally measured daily, was then smoothed with the help of the weighted form of the running median (KESMO-Program; cf. GASSER & MUELLER, 1984), in order to supress the major part of the error variance. To attain a certain standardization and thus a better comparability among the patients, the daily weights were changed into percentages of the ideal weight before the smoothing. These normed and smoothed curves were plotted and optically presented for each person. The following results were found for the two groups (cf. table 1):

In the diet group, we find a more or less prolonged protest phase at the beginning of the therapy which shows up as a deficient weight gain or even weight loss. This phase is shorter in younger patients (under 13 years) or is missing altogether. In this phase, the patients attempt to pressure their parents into allowing them to discontinue therapy. However, the low weight gain signals the therapist and he begins countermeasures (e.g. through his support of the parents in their therapy motivation or through the supervision of the parent-child communication). Thus, therapy is seldom discontinued (in five cases).

Table 1: Results from both groups

	bulimic group (29)	restrictive dieters (26)	signif.
mean IQ	110.7	120.3	*
not attending Gymnasium	11	4	**
with atrophy	16	9	n.s.
mean age	15.3	14.2	T
primary amenorrhea	10	10	n.s.
minimum weight	69%	66%	* (IQ dependent)
emaciated	13	10	n.s.
duration of illness	17.6 months	6.7 months	**
symptoms	depressive		
duration of hospitalization	130 days	146 days	*
weight gain phase	88 days	106 days	n.s.
maintenance phase	43 days	39 days	n.s.
therapy discontinued	10	5	T
weight gain	200 gr/wk	200 gr/wk	
problem phase	90-95%	min-80%	*
therapy 'tricks'	weighing	gymnastic	

Legend: T = tendency (10% level)
n.s. = not significant
* = significant (5% level)
** = significant (1% level)

In the bulimic group, however, we generally find a problem-free initial therapy process with slow but steady weight increases, so that therapy discontinuation occurs more frequently and come as a surprise to the therapist.

Once the restrictive dieters have accepted the therapy, they often manage to see the weight gain as an achievement and thus accomplish further weight gain and the maintenance phase progresses without problem.

This is not so in the bulimic group. At the 90% to 95% level, we often find a plateau, i.e. the patients are not able to accept a higher weight. Often, therapy is discontinued during this phase. This creates a sense of helplessness in the therapist since the patient's weight is no longer in the acute life-threatening range.

The typical weight gain curves and the problem phases in therapy are shown in figure 4 for both groups.

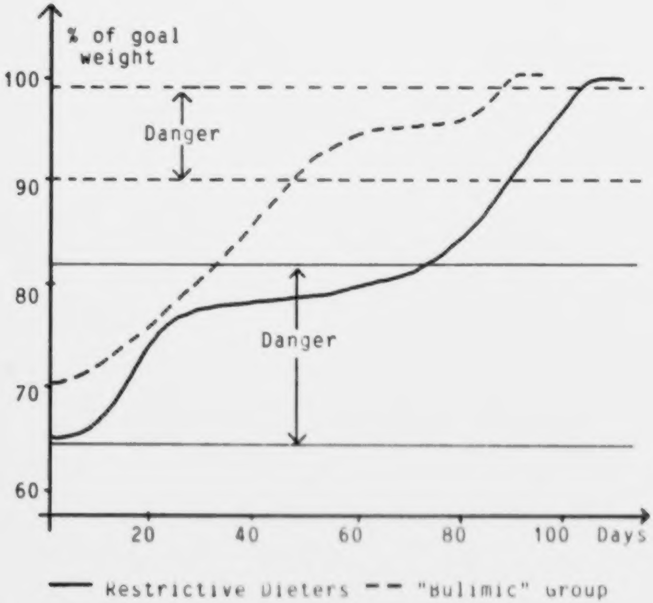

Figure 4: Typical weight gain curves for both groups

4. Discussion

The lower prevalence of conduct disorders in the highly intelligent has been proven in several utilization studies (Reinhard, 1980; Prat, 1979; Schmidt, 1977). On the one hand, this could point to a more mature moral development (cf. Terman & Oden, 1959); on the other hand it could be explained by different cognitive strategies which enable the individual to repress initial behavior impulses and to first submit them to a cognitive control.

However, the most striking result, also because of its statistical significance, is the overrepresentation of highly intelligent individuals among our anorectic patients. Six possible explanations can be given for the greater risk for highly intelligent patients suffering from anorexia nervosa:

(1) The twin studies from Schepank (1983) suggest (despite the small number of cases available) a clear genetic predisposition for anorexia nervosa (cf. table 2):

Table 2: Results of the twin studies from Schepank (1983) with regard to concordance with anorexia nervosa

	Concordant	Discordant
monozygotes	6	2
dizygotes	–	5

One explanation is a linkage between the two probably polygenetic inheritance patterns for intelligence and anorexia nervosa. It is, however, difficult to imagine such a coupling that would lead to more intelligence and at the same time cause a disturbance in the regulation of the hypophysis-hypothalmic-axis (cf. Toifl et al., 1985).

(2) Some authors (cf. Crisp, 1984) see anorexia as a rejection of the female role, and they are supported by the amenorrhea and the age of onset (puberty and adolescence). Highly intelligent girls meet with less understanding in our society than do highly intelligent boys. It then becomes clear that during puberty these girls, with a predominantly masculine orientation (cf. Warren & Heist, 1959; Terman & Oden, 1959), come into conflict with their developing womanhood. Based on clinical experience, this explanation is only useful for some of the patients.

(3) Ermann (1978) was able to show that more highly intellingent persons are to be found among psychovegatively ill patients with anacastic personality structures. This type of personality structure is an excellent breeding ground for anorexia nervosa. And for its part, the compulsive structure with its tendency to classification and order, fosters the development of intelligence.

(4) Various authors (cf. Powers, 1984) assume that the anorectic illness always stems from a basic conflict that the youth have with their future role-taking behavior. The life-threatening weight loss defuses the conflict and thus delays the final decision. Highly intelligent girls are especially prone to specific conflict situations (cf. Miller, 1979). Parents of anorectic girls often report that they are ideal children without any problems. Therefore, too much is demanded of them; they have to take over parental roles or have to choose sides

in parental conflicts. A further possibility is that highly intelligent girls are especially vulnerable to the self-denial-hedonistic conflict (cf. POWERS, 1984).

(5) A better understanding of gifted anorectic girls is expected from new advances in the field of cognitive psychology. It has been repeatedly stressed that the gifted have different cognitive strategies available to them, although these have not yet been precisely determined. The following have been described; greater perserverance, achievement orientation and a predominantly cognitive control. All of these abilities help the patients at the beginning of their illness to consistently reduce their weight and thus meet their objective. In the course of the weight loss, the illness develops a dynamic of its own which interferes with willful weight control. This explanation is also supported by the fact that gifted anorectic girls are admitted to the psychiatric children's hospital in a more emaciated state than normally intelligent patients.

(6) GARNER & GARFINKEL (1980) have suggested a further hypothesis which describes social status as a moderator variable. Accordingly, there are many historical examples of women from higher social classes who, for reasons of status, lived unhealthily. The foot-binding in Japan and the wearing of corsets during the 18th century are examples of this. The weight and height of the ideal woman has also varied in history. It would appear that in times when there is generally enough to eat, the rich woman is more often thin and in times of hunger tends to be plump. As various American researchers have shown, the weight of the ideal woman (as seen in beauty pagents and models in magazines) has steadily decreased, whereas the weight of the average woman, seen statistically, is constantly increasing (cf. GARNER et al., 1980). This pressure to be thin and trim is more obvious in the upper social classes than in the lower class. At the same time, more highly gifted individuals are to be found in the upper class.

In our study, however, no differences in social status were found between the highly intelligent and the normally intelligent control group.

5. Consequences

According to PALMER (1980), 12 girls died in Great Britain in 1975 of anorexia nervosa. Of 100 girls in the affected age group, approximately one gets anorexia. Half of these usually needs inpatient treatment, usually lasting several months. In addition, the later treatment begins, the higher the likelihood that the illness will become chronic. This should be reason enough to begin preventative measures, such as anticipatory counseling. Since the illness proceeds in the early stages in an ego-syntonic manner without patient suffering, it is especially important that the parents and teachers of highly intelligent children become involved in order to make the early recognition and treatment of this disease possible.

Summary

Good intellectual achievement is usually seen as a protective factor against the genesis of child psychiatric disturbances, but there are some doubts whether this is still true in the extreme range of high intelligence (IQ greater than or equal to 130). The question continues to be discussed whether highly intelligent persons are overrepresented among anorectic patients since some authors have been able to demonstrate cognitive disturbances linked with anorexia nervosa.

We undertook the following analyses to investigate these questions. For all of the highly intelligent patients treated at the Child and Adolescent Psychiatric Clinic at Mannheim Central Institute during the years from 1978 to 1985, a normally intelligent control group was formed, matched by sex and age. A comparison of the diagnoses in the two groups showed half as many conduct disorders and an overrepresentation of 'anorexia nervosa' by a factor of ten in the highly intelligent subgroup.

In the next step, we divided all treated anorectic patients into two groups, called the 'bulimic group' and the 'restrictive dieters'. A comparison between the two groups revealed not only differences in symptomatologoy but also in intelligence level and course of therapy. These findings indicate that highly intelligent girls between 12 and 15 years of age are especially vulnerable to the development of anorexia nervosa of the type here called 'restrictive dieters'. In a discussion, we present six possible explanations.

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APPENDIX

1. Selective Bibliography: 'Identification of the Intellectually Gifted'

Barbara Feger

This appendix presents a bibliography on the topic of identification of giftedness. In my opinion such a bibliography might be helpful for various reasons. This one tries to cover publications from several countries and puts special emphasis on the German literature. The German clearinghouse for literature on the gifted is still in its beginning stage and their list of references is less comprehensive than the present one. Moreover, many researchers working in the field of giftedness in Germany are unaware of the wealth of excellent literature published in Germany until the beginning of National Socialism in 1933. Certainly some of these older publications are merely of historical interest; many of them, however, offer an enormous amount of interesting information which might still be very valuable today. In the USA foreign publications are usually not listed at all; so researchers in the USA who would like to give up their 'splendid isolation' might consider this bibliography a kind of invitation to have a look across the border.

A vast amount of literature exists on the topic of identification of giftedness and talent. Due to the limited space alloted for this appendix, this bibliography must be selective. The following considerations determined the selection of entries:

First, the bibliography focuses on intellectual giftedness. Limited areas of intellectual giftedness - like mathematical giftedness - are also included. Excluded are special talents in the arts and sports and, for instance, social giftedness.

Second, those publications are excluded which are virtually impossible to obtain. Among these are papers presented at conventions, but never printed, and internal research reports written a long time ago. Also excluded are entries from Dissertation Abstracts International because of the limited amount of information these items give.

Third, definitions, models of intelligence, reports on the use of a particular test for the identification of giftedness are generally not included. On the other hand it is common that the kind of definition of giftedness determines the identification procedure. Recent attempts at a definition which have been widely accepted include other more than mere intellectual factors and/or creativity. Examples are the conception of giftedness by Renzulli in the USA; also the expanded definition of intelligence by Jäger in Germany might be mentioned here. For this reason literature on personality factors etc. is included to a certain extent. Fourthly, a special attempt was made to cover the German literature.

A more extensive bibliography containing also identification of musical giftedness, definitions, and basic conceptual papers along with a paper on the state of the art can be obtained from the author (Feger & Reimann 1986 in this bibliography; requests should be sent to the address below).

My thanks are due to Alexander Botte from the reference service *id talent* who informed me about 20 publications which had not been included in my extended list.

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Research on the highly gifted, and even the definition of the term itself, presents a number of serious problems: What is to be understood empirically under the term giftedness, and how is it to be defined theoretically and practically? How can highly intelligent children and youths be reliably and validly identified? Are there undesirable side-effects? And how can they be avoided? What are the pedagogical fostering possibilities available? What are the psychological or clinical problems of the highly gifted during socialization and development?
This volume represents the latest information on the phenomena and developmental conditions of the highly gifted the world over. It is written in a comprehensible form for both scientists from the fields of developmental and educational psychology, diagnostics, and the behavioral sciences as well as for the broader interested lay public.

Of interest to: Psychologists (counselors, school psychologists), teachers, social workers, career planning counselors, physicians, child psychiatrists, mental health workers

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